<213> Homo sapiens

<400> 4312
Xaa Arg Val Lys Gly Ile Arg Pro Trp Asn Cys Gln Arg Cys Phe Ala
1   5   10   15
His Tyr Asp Val Gln Ser Ile Leu Phe Asn Ile Asn Glu Ala Met Ala
            20   25   30
Thr Arg Ala Asn Val Gly Lys Arg Lys Asn Ile Thr Thr Gly Ala Ser
        35   40   45
Ala Ala Ser Gln Thr Gln Met Pro Thr Gly Gln Thr Gly Asn Cys Glu
    50   55   60
Ser Pro Leu Gly Ser Lys Glu Asp Leu Asn Ser Lys Glu Asn Leu Asp
65   70   75   80
Ala Asp Glu Gly Asp Gly Lys Ser Asn Asp Leu Val Leu Ser Cys Pro
                85   90   95
Tyr Phe Arg Asn Glu Thr Gly Gly Glu Gly Asp Arg Arg Ile Ala Leu
            100   105   110
Ser Arg Ala Asn Ser Ser Ser Phe Ser Ser Gly Glu Ser Cys Ser Phe
        115   120   125
Glu Ser Ser Leu Ser Ser His Cys Thr Asn Ala Gly Val Ser Val Leu
    130   135   140

<210> 4313
<211> 936
<212> DNA
<213> Homo sapiens

<400> 4313
ggatccctcc tttttcctcc cctgccctgc ccaggcccag atggccttga ctgtaaagcc
60
aggtgctgcc tgacaggttc ttctctccct gtctctggtc attgatccat ctctttgtcc
120
attcagtatc caaccatcct ctccattctc ctctggacct caccactctc agagctgctt
180
gtcctggcag aatctacagt tcaccccaac tctatgcctt acccctccca acccaacagc
240
atttgcagtt tgcaaaatat acagacccaa gtcctgaggg gactgaggac atgatgctgg
300
gcccaagtct cctgctcagg gcttctctcc aatgccagcc ctgccactcc ttcctcaccc
360
tccttggagc ctcctctgct gcttgtctat cccaacggcc ctgctcccct cccttcctgc
420
ccttcaccag ctttctggga caccatgccc tgaggaaggg acctttggtt ttctctaaac
480
atctttgaag ggctgaggca gtcagggctg gctgccttgt cactctttat ttggaagcca
540
ctcaaaccat tcccaagaag agggacctca gctggcaatc tggaaacctg gcccaggtct
600
gggcagatgt cttcacttct cctaccttcc cagtcttgtg atcctgtgat gagcaccagg
660
atggccctgt ggtccctaga gcacccctca tgctgtaggg tcctgcagcc ccatcctttc
720
tctactgggc cctggtatcc tggctcctct ctcagctctg ccactgatct ctgtgcctta
780

3511

gtttacttct ctgcacgggg gactcacccc aagaccattt ccagcagctt cccaggtgat
840

gtggtgcccc aaggctgggc tttgcagctg tggcccagct ccttagtgct gcccaggaga
900

caccaggctg ctcagaatga ggtgactgcg ggcaac
936

<210> 4314
<211> 110
<212> PRT
<213> Homo sapiens

<400> 4314
Met Ser Ser Leu Leu Leu Pro Ser Gln Ser Cys Asp Pro Val Met Ser
1   5   10   15
Thr Arg Met Ala Leu Trp Ser Leu Glu His Pro Ser Cys Cys Arg Val
            20   25   30
Leu Gln Pro His Pro Phe Ser Thr Gly Pro Trp Tyr Pro Gly Ser Ser
        35   40   45
Leu Ser Ser Ala Thr Asp Leu Cys Ala Leu Val Tyr Phe Ser Ala Arg
    50   55   60
Gly Thr His Pro Lys Thr Ile Ser Ser Ser Phe Pro Gly Asp Val Val
65   70   75   80
Pro Gln Gly Trp Ala Leu Gln Leu Trp Pro Ser Ser Leu Val Leu Pro
                85   90   95
Arg Arg His Gln Ala Ala Gln Asn Glu Val Thr Ala Gly Asn
            100   105   110

<210> 4315
<211> 573
<212> DNA
<213> Homo sapiens

<400> 4315
nncctaatcc aatatgactg gtgtccttat aagaagagga aattaggaca cagacaggca
60

cagagcgatg accatgtgaa gacacaggga agagatggcc acctaccacc acgccatggt
120

cacctaccat ccaagccatg gtcaccttca ccaagccaca gtcatctacc atccaagcca
180

ccgtcaccta ccatccaagc catggccacc tacctgccaa gccatggcca cctacccgcc
240

aagccatggt cacctaccca ccaagtcatg gtcgcctacc atccaaggag caggcctgga
300

acagatcctt ccccagagcc ctcagtagga gccaaccctg ctgacacctt gatctcagac
360

ttcaagcctc cagaactgtg ggacaatcct tcactgtcat ttaatccacc cagcatgtgg
420

tctcttgtca cagttgcatt agccagtgaa cctacccggg cccttctgca gtcgcctggc
480

tcaggagtgg ttctggtcag gaagttctga ggccaggcag gatcgggaca ctccctggaa
540

agacccgagg gagatatttg ggaaacaaga tgg
573

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<210> 4316
<211> 169
<212> PRT
<213> Homo sapiens

<400> 4316
Xaa Leu Ile Gln Tyr Asp Trp Cys Pro Tyr Lys Lys Arg Lys Leu Gly
1               5                   10                  15
His Arg Gln Ala Gln Ser Asp Asp His Val Lys Thr Gln Gly Arg Asp
            20                  25                  30
Gly His Leu Pro Pro Arg His Gly His Leu Pro Ser Lys Pro Trp Ser
        35                  40                  45
Pro Ser Pro Ser His Ser His Leu Pro Ser Lys Pro Pro Ser Pro Thr
    50                  55                  60
Ile Gln Ala Met Ala Thr Tyr Leu Pro Ser His Gly His Leu Pro Ala
65                  70                  75                  80
Lys Pro Trp Ser Pro Thr His Gln Val Met Val Ala Tyr His Pro Arg
                85                  90                  95
Ser Arg Pro Gly Thr Asp Pro Ser Pro Glu Pro Ser Val Gly Ala Asn
            100                 105                 110
Pro Ala Asp Thr Leu Ile Ser Asp Phe Lys Pro Pro Glu Leu Trp Asp
            115                 120                 125
Asn Pro Ser Leu Ser Phe Asn Pro Pro Ser Met Trp Ser Leu Val Thr
    130                 135                 140
Val Ala Leu Ala Ser Glu Pro Thr Arg Ala Leu Leu Gln Ser Pro Gly
145                 150                 155                 160
Ser Gly Val Val Leu Val Arg Lys Phe
                165

<210> 4317
<211> 744
<212> DNA
<213> Homo sapiens

<400> 4317
nntgaagaga agtcaaaaaa ctcatgacct gtcagagatt tggggtccat ttcaggatca
60
tcccatgccg aaaacatact ccagatattt aatgaatttc gtgatagccg cttattcaca
120
gatgttatca tttgggtgga aggaaaagaa tttccttgcc atagagctgt gctctcagcc
180
tgtagcagct acttcagagc tatgttttgt aatgaccaca gggaaagccg agaaatgttg
240
gttgagatca atggtatttt agctgaagct atggaatgtt ttttgcagta tgtttatact
300
ggaaaggtga agatcactac agagaatgta cagtatctct ttgagacatc aagcctcttt
360
cagattagtg ttctccgtga tgcatgtgcc aagttcttgg aggagcaact tgatccttgt
420
aattgcttag gaatccagcg ctttgctgat acccattcac tcaaaacact cttcacaaaa
480
tgcaaaaatt ttgcgttaca gacttttgag gatgtatccc agcacgaaga atttcttgag
540
```

3513

cttgacaaag atgaacttat tgattatatt tgtagtgatg aacttgttat tggtaaagag
600

gagatggttt ttgaagccgt catgcgttgg gtctatcgtg ccgttgatct gagaagacca
660

ctgttacacg agctcctgac acatgtgaga ctccctctgt tgcatcccaa ctactttgtt
720

caaacagttg aagtggacca attg
744

<210> 4318
<211> 239
<212> PRT
<213> Homo sapiens

<400> 4318
Pro Val Arg Asp Leu Gly Ser Ile Ser Gly Ser Ser His Ala Glu Asn
 1   5   10   15
Ile Leu Gln Ile Phe Asn Glu Phe Arg Asp Ser Arg Leu Phe Thr Asp
                20   25   30
Val Ile Ile Trp Val Glu Gly Lys Glu Phe Pro Cys His Arg Ala Val
                35   40   45
Leu Ser Ala Cys Ser Ser Tyr Phe Arg Ala Met Phe Cys Asn Asp His
        50   55   60
Arg Glu Ser Arg Glu Met Leu Val Glu Ile Asn Gly Ile Leu Ala Glu
65   70   75   80
Ala Met Glu Cys Phe Leu Gln Tyr Val Tyr Thr Gly Lys Val Lys Ile
                85   90   95
Thr Thr Glu Asn Val Gln Tyr Leu Phe Glu Thr Ser Ser Leu Phe Gln
                100   105   110
Ile Ser Val Leu Arg Asp Ala Cys Ala Lys Phe Leu Glu Glu Gln Leu
        115   120   125
Asp Pro Cys Asn Cys Leu Gly Ile Gln Arg Phe Ala Asp Thr His Ser
    130   135   140
Leu Lys Thr Leu Phe Thr Lys Cys Lys Asn Phe Ala Leu Gln Thr Phe
145   150   155   160
Glu Asp Val Ser Gln His Glu Glu Phe Leu Glu Leu Asp Lys Asp Glu
                165   170   175
Leu Ile Asp Tyr Ile Cys Ser Asp Glu Leu Val Ile Gly Lys Glu Glu
                180   185   190
Met Val Phe Glu Ala Val Met Arg Trp Val Tyr Arg Ala Val Asp Leu
        195   200   205
Arg Arg Pro Leu Leu His Glu Leu Leu Thr His Val Arg Leu Pro Leu
    210   215   220
Leu His Pro Asn Tyr Phe Val Gln Thr Val Glu Val Asp Gln Leu
225   230   235

<210> 4319
<211> 388
<212> DNA
<213> Homo sapiens

<400> 4319
nccatggaga aaagtattga tgctgtgatt gcaactgcct ctgcaccacc ttcttccagt
60

ccaggccgta gccacagcaa ggaccgaacc ctgggaaaac cagacagcct tttagtgcct
120
gcagtcgcaa gtgactcttg caataatagc atctcactcc tatctgaaaa gttgacaagc
180
agctgttccc cccatcatat caagagaagt gtagtggaag ctatgcaacg ccaagctcgg
240
aaaatgtgca attacgacaa aatcttggcc acaaagaaaa acctagacca tgtcaataaa
300
atcttaaaag ccaaaaaact tcaaaggcag gccaggacag ggaataactt tgtgaaacgt
360
aggccaggtc gaccgcggtc ggagagag
388

<210> 4320
<211> 129
<212> PRT
<213> Homo sapiens

<400> 4320
Xaa Met Glu Lys Ser Ile Asp Ala Val Ile Ala Thr Ala Ser Ala Pro
1   5   10   15
Pro Ser Ser Ser Pro Gly Arg Ser His Ser Lys Asp Arg Thr Leu Gly
            20   25   30
Lys Pro Asp Ser Leu Leu Val Pro Ala Val Ala Ser Asp Ser Cys Asn
        35   40   45
Asn Ser Ile Ser Leu Leu Ser Glu Lys Leu Thr Ser Ser Cys Ser Pro
    50   55   60
His His Ile Lys Arg Ser Val Val Glu Ala Met Gln Arg Gln Ala Arg
65   70   75   80
Lys Met Cys Asn Tyr Asp Lys Ile Leu Ala Thr Lys Lys Asn Leu Asp
                85   90   95
His Val Asn Lys Ile Leu Lys Ala Lys Lys Leu Gln Arg Gln Ala Arg
            100   105   110
Thr Gly Asn Asn Phe Val Lys Arg Arg Pro Gly Arg Pro Arg Ser Glu
        115   120   125
Arg

<210> 4321
<211> 278
<212> DNA
<213> Homo sapiens

<400> 4321
ngcccagaac ctgccacagt cccctgagaa caccgacctg caggttattc caggcagcca
60
gaccaggctc cttggtgaga agaccaccac agcggcaggg tccagccaca gcaggcccgg
120
cgtcccggtg gaaggcagcc ctgggcggaa cccaggcgtt taacggctca ctaggcagcc
180
ccagatctgg ggaacagatg agcacgtggg gagctggagt gagctgagca gaagttttgt
240
gcccgcctgc cccccatcccc tccaggccac gttttaga
278

<210> 4322
<211> 85
<212> PRT
<213> Homo sapiens

<400> 4322
Met Gly Ala Gly Gly His Lys Thr Ser Ala Gln Leu Thr Pro Ala Pro
1   5   10   15
His Val Leu Ile Cys Ser Pro Asp Leu Gly Leu Pro Ser Glu Pro Leu
            20   25   30
Asn Ala Trp Val Pro Pro Arg Ala Ala Phe His Arg Asp Ala Gly Pro
        35   40   45
Ala Val Ala Gly Pro Cys Arg Cys Gly Gly Leu Leu Thr Lys Glu Pro
    50   55   60
Gly Leu Ala Ala Trp Asn Asn Leu Gln Val Gly Val Leu Arg Gly Leu
65   70   75   80
Trp Gln Val Leu Gly
                85

<210> 4323
<211> 1542
<212> DNA
<213> Homo sapiens

<400> 4323
ngttacagta aagatggagc aaagtccttg aaaggagatg tgcctgcctc tgaggtgaca
60
ctgaaagact cgacattcag ccagtttagc ccgatctcca gtgctgaaga gtttgatgac
120
gacgagaaga ttgaggtgga tgaccccccт dacaaggagg acatgcgatc aagcttcagg
180
tcgaatgtgt tgacggggtc ggctccccag caggactacg ataagctgaa ggcactcgga
240
ggggaaaact ccagcaaaac tggactctct acgtcaggca atgtggagaa aaacaaagct
300
gttaagagag aaacagaagc cagttctata aacctgagtg tttatgaacc ttttaaagtc
360
agaaaagcag aggataaatt gaaggaaagc tctgacaagg tgctggaaaa cagagtccta
420
gatgggaagc tgagctccga gaagaatgac accagcctcc ccagcgttgc gccatcaaag
480
acaaagtcgt cctccaagct ctcgtcctgc atcgctgcca tcgcggctct cagcgctaaa
540
aaggcggctt cagactcctg caaagaacca gtggccaatt cgagggaatc ctccccgtta
600
ccaaaagaag taaatgacag tccgagagcc gctgacaagt ctcctgaatc ccagaatctc
660
atcgacggga ccaaaaaacc atccctgaag caaccggata gtcccagaag catctcaagt
720
gagaacagca gcaaaggatc cccgtcctct cccgcggggt ccacaccagc aatcccccaaa
780
gtccgcataa aaaccattaa gacatcttct ggggaaatca agagaacagt gaccagggta
840

ttgccagaag tggatcttga ctctggaaag aaaccttccg agcagacagc gtccgtcatg
900
gcctctgtga catcccttct gtcgtctcca gcatcagccg ccgtcctttc ctctcccccc
960
agggcgcctc tccagtctgc ggtcgtgacc aatgcagttt cccctgcaga gctcacccccc
1020
aaacaggtca caatcaagcc tgtggctact gctttcctcc cagtgtctgc tgtgaagacg
1080
gcaggatccc aagtcattaa tttgaagctc gctaacaaca ccacggtgaa agccacggtc
1140
atatctgctg cctctgtcca gagtgccagc agcgccatca ttaaagctgc caacgccatc
1200
cagcagcaaa ctgtcgtggt gccggcatcc agcctggcca atgccaaact cgtgccaaag
1260
actgtgcacc ttgccaacct taacctttttg cctcagggtg cccaggccac ctctgaactc
1320
cgccaagtgc taaccaaacc tcagcaacaa ataaagcagg caataatcaa tgcagcagcc
1380
tcgcaacccc ccaaaaaggt gtctcgagtc caggtggtgt cgtccttgca gagttctgtg
1440
gtggaagctt tcaacaaggt gctgagcagt gtcaatccag tccctgttta catcccaaac
1500
ctcagtcctc ccgccaatgc agggatcacg ttaccgacgc gt
1542

<210> 4324
<211> 514
<212> PRT
<213> Homo sapiens

<400> 4324
Xaa Tyr Ser Lys Asp Gly Ala Lys Ser Leu Lys Gly Asp Val Pro Ala
1   5   10   15
Ser Glu Val Thr Leu Lys Asp Ser Thr Phe Ser Gln Phe Ser Pro Ile
            20   25   30
Ser Ser Ala Glu Glu Phe Asp Asp Asp Glu Lys Ile Glu Val Asp Asp
        35   40   45
Pro Pro Asp Lys Glu Asp Met Arg Ser Ser Phe Arg Ser Asn Val Leu
    50   55   60
Thr Gly Ser Ala Pro Gln Gln Asp Tyr Asp Lys Leu Lys Ala Leu Gly
65   70   75   80
Gly Glu Asn Ser Ser Lys Thr Gly Leu Ser Thr Ser Gly Asn Val Glu
                85   90   95
Lys Asn Lys Ala Val Lys Arg Glu Thr Glu Ala Ser Ser Ile Asn Leu
            100   105   110
Ser Val Tyr Glu Pro Phe Lys Val Arg Lys Ala Glu Asp Lys Leu Lys
            115   120   125
Glu Ser Ser Asp Lys Val Leu Glu Asn Arg Val Leu Asp Gly Lys Leu
    130   135   140
Ser Ser Glu Lys Asn Asp Thr Ser Leu Pro Ser Val Ala Pro Ser Lys
145   150   155   160
Thr Lys Ser Ser Ser Lys Leu Ser Ser Cys Ile Ala Ala Ile Ala Ala
                165   170   175
Leu Ser Ala Lys Lys Ala Ala Ser Asp Ser Cys Lys Glu Pro Val Ala

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                    180                    185                    190
       Asn Ser Arg Glu Ser Ser Pro Leu Pro Lys Glu Val Asn Asp Ser Pro
               195                    200                    205
       Arg Ala Ala Asp Lys Ser Pro Glu Ser Gln Asn Leu Ile Asp Gly Thr
           210                    215                    220
       Lys Lys Pro Ser Leu Lys Gln Pro Asp Ser Pro Arg Ser Ile Ser Ser
       225                    230                    235                    240
       Glu Asn Ser Ser Lys Gly Ser Pro Ser Ser Pro Ala Gly Ser Thr Pro
                       245                    250                    255
       Ala Ile Pro Lys Val Arg Ile Lys Thr Ile Lys Thr Ser Ser Gly Glu
                   260                    265                    270
       Ile Lys Arg Thr Val Thr Arg Val Leu Pro Glu Val Asp Leu Asp Ser
               275                    280                    285
       Gly Lys Lys Pro Ser Glu Gln Thr Ala Ser Val Met Ala Ser Val Thr
           290                    295                    300
       Ser Leu Leu Ser Ser Pro Ala Ser Ala Ala Val Leu Ser Ser Pro Pro
       305                    310                    315                    320
       Arg Ala Pro Leu Gln Ser Ala Val Val Thr Asn Ala Val Ser Pro Ala
                       325                    330                    335
       Glu Leu Thr Pro Lys Gln Val Thr Ile Lys Pro Val Ala Thr Ala Phe
                   340                    345                    350
       Leu Pro Val Ser Ala Val Lys Thr Ala Gly Ser Gln Val Ile Asn Leu
                   355                    360                    365
       Lys Leu Ala Asn Asn Thr Thr Val Lys Ala Thr Val Ile Ser Ala Ala
           370                    375                    380
       Ser Val Gln Ser Ala Ser Ser Ala Ile Ile Lys Ala Ala Asn Ala Ile
       385                    390                    395                    400
       Gln Gln Gln Thr Val Val Val Pro Ala Ser Ser Leu Ala Asn Ala Lys
                       405                    410                    415
       Leu Val Pro Lys Thr Val His Leu Ala Asn Leu Asn Leu Leu Pro Gln
                   420                    425                    430
       Gly Ala Gln Ala Thr Ser Glu Leu Arg Gln Val Leu Thr Lys Pro Gln
               435                    440                    445
       Gln Gln Ile Lys Gln Ala Ile Ile Asn Ala Ala Ala Ser Gln Pro Pro
           450                    455                    460
       Lys Lys Val Ser Arg Val Gln Val Val Ser Ser Leu Gln Ser Ser Val
       465                    470                    475                    480
       Val Glu Ala Phe Asn Lys Val Leu Ser Ser Val Asn Pro Val Pro Val
                       485                    490                    495
       Tyr Ile Pro Asn Leu Ser Pro Pro Ala Asn Ala Gly Ile Thr Leu Pro
                   500                    505                    510
       Thr Arg
```

<210> 4325
<211> 1405
<212> DNA
<213> Homo sapiens

<400> 4325
acgcgtgccc ggggtctgct gtgcagcgca gcccgttgtg gtgatacgag ccggagatgc
60
cttctgcagg gactgtttca aggccttcta cgtccacaag ttcatagcca tgctgggcaa
120

gaaccggctc atctttccag gcgagaaggt agcgtctggg tcctggggggt ctgactgagc
180
agcctggccc ctcgaggtcc ctgcttgtcc ctcccacagg cagcctggcc tgctgcagcc
240
cgccagctcc tccttggcct ttgaggacag actcgatgtc ctagatgtcc acgaggtggg
300
gtgtctgcct gtgttggagg tgcggtgccc tgagtgatgt tttttctccc ccaggtgctc
360
ttggcgtggt ctggggggcc ttcgtccagc tccatggtct ggcaggttct tgagggcctg
420
agccaagatt ctgccaaaag actgcgcttt gtggcaggag tcatctttgt tgacgaggga
480
gcagcctgtg gccagagcct agaggagaga tcaaagaccc tggccgaagt gaagcccatt
540
ctgcaagcaa ctgggttccc atggcatgtg gtggccttag aggaggtgtt cagcctgcca
600
ccgtcggtgc tttggtgctc tgcccaggag ctggtgggat ccgaggggggc ctacaaggcg
660
gccgtggaca gcttcctcca gcagcagtat gtgctggggg ccggggggtgg tcctggcccg
720
actcaagggg aggaacagcc accccagccc ccgctggacc cccagaacct ggcaagaccg
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cctgcccctg cccagactga ggctctttcc caactgttct gctcagtgag gacactgact
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960
accaacctgg cgctgggtcg aggggccttc ctggcctggg atacgggctt ctcggatgag
1020
cggcacgggg acgtggtggt ggtgcggccc atgcgggacc acaccctgaa ggaggtcgct
1080
ttctacaacc gcctgttctc cgttccttct gtcttcacac cagccgtcga caccaaggcc
1140
cctgaaaagg ccagcatcca ccggctgatg gaggccttca tcctcaggct gcagacccag
1200
ttcccctcca ctgtcagcac tgtgtacagg tgtgtgtggg tgtgtgcggg gggtgcgcgg
1260
gtgtgtgctg tgtgcgggtg tgtgcgggtg gtgagctcac cactcgtgct caggccaggg
1320
cttagggtgg agccccagcc cgtgtgattc acctgctcct cccacaatcc ggccacagga
1380
caagtgagaa gcttgtgaag ggccc
1405

<210> 4326
<211> 336
<212> PRT
<213> Homo sapiens

<400> 4326
Met Phe Phe Leu Pro Gln Val Leu Leu Ala Trp Ser Gly Gly Pro Ser
1   5   10   15
Ser Ser Ser Met Val Trp Gln Val Leu Glu Gly Leu Ser Gln Asp Ser

```
                    20                   25                   30
Ala Lys Arg Leu Arg Phe Val Ala Gly Val Ile Phe Val Asp Glu Gly
        35                   40                   45
Ala Ala Cys Gly Gln Ser Leu Glu Glu Arg Ser Lys Thr Leu Ala Glu
    50                   55                   60
Val Lys Pro Ile Leu Gln Ala Thr Gly Phe Pro Trp His Val Val Ala
65                   70                   75                   80
Leu Glu Glu Val Phe Ser Leu Pro Pro Ser Val Leu Trp Cys Ser Ala
                85                   90                   95
Gln Glu Leu Val Gly Ser Glu Gly Ala Tyr Lys Ala Ala Val Asp Ser
                100                  105                  110
Phe Leu Gln Gln Gln Tyr Val Leu Gly Ala Gly Gly Gly Pro Gly Pro
        115                  120                  125
Thr Gln Gly Glu Glu Gln Pro Pro Gln Pro Pro Leu Asp Pro Gln Asn
    130                  135                  140
Leu Ala Arg Pro Pro Ala Pro Ala Gln Thr Glu Ala Leu Ser Gln Leu
145                  150                  155                  160
Phe Cys Ser Val Arg Thr Leu Thr Ala Lys Glu Glu Leu Leu Gln Thr
                165                  170                  175
Leu Arg Thr His Leu Ile Leu His Met Ala Arg Ala His Gly Tyr Ser
                180                  185                  190
Lys Val Met Thr Gly Asp Ser Cys Thr Arg Leu Ala Ile Lys Leu Met
                195                  200                  205
Thr Asn Leu Ala Leu Gly Arg Gly Ala Phe Leu Ala Trp Asp Thr Gly
    210                  215                  220
Phe Ser Asp Glu Arg His Gly Asp Val Val Val Val Arg Pro Met Arg
225                  230                  235                  240
Asp His Thr Leu Lys Glu Val Ala Phe Tyr Asn Arg Leu Phe Ser Val
                245                  250                  255
Pro Ser Val Phe Thr Pro Ala Val Asp Thr Lys Ala Pro Glu Lys Ala
                260                  265                  270
Ser Ile His Arg Leu Met Glu Ala Phe Ile Leu Arg Leu Gln Thr Gln
        275                  280                  285
Phe Pro Ser Thr Val Ser Thr Val Tyr Arg Cys Val Trp Val Cys Ala
    290                  295                  300
Gly Gly Ala Arg Val Cys Ala Val Cys Gly Cys Val Arg Val Val Ser
305                  310                  315                  320
Ser Pro Leu Val Leu Arg Pro Gly Leu Arg Val Glu Pro Gln Pro Val
                325                  330                  335
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<210> 4327
<211> 551
<212> DNA
<213> Homo sapiens

<400> 4327
tggccacagg cagagccgcc tctgcaggtg acacccaccc caggccgtgc accccacctc
60
caccctcgca ggccacccag acggcagctt ggggaaacct gggaggtccc gtaccctcac
120
tgtgcaggtg gggaaattta gaccctgaaa aagggatgcc ctgagatcac catgagattg
180
aggggcaagc agggctcacc ctgactggct cacttcccag gcaccccat gagcccaggc
240

accgcctgcc accctcactc tccaggaaga gccaccgcgt ggtggccggg atcgtgtggt
300
ggccagggcg tctgaccttg gctctcaccc ggaggccatc caggtgctga ggatggctaa
360
cgctaaggcc acacagccag ggagaggagg tggctcgtga caccacgatg ggacacaccc
420
acctctggga gaggagggtg actccgacag cccttgcctg ccaggatgga gcctggactc
480
tggagggcat cgtgtcctgg agcagcacca gcacctcctg ttgtcaccag gcgtggatgc
540
ccgcatcatg a
551

<210> 4328
<211> 107
<212> PRT
<213> Homo sapiens

<400> 4328

Met	Pro	Ser	Arg	Val	Gln	Ala	Pro	Ser	Trp	Gln	Ala	Arg	Ala	Val	Gly
1				5					10					15	
Val	Thr	Leu	Leu	Ser	Gln	Arg	Trp	Val	Cys	Pro	Ile	Val	Val	Ser	Arg
			20					25					30		
Ala	Thr	Ser	Ser	Pro	Trp	Leu	Cys	Gly	Leu	Ser	Val	Ser	His	Pro	Gln
		35					40					45			
His	Leu	Asp	Gly	Leu	Arg	Val	Arg	Ala	Lys	Val	Arg	Arg	Pro	Gly	His
	50					55					60				
His	Thr	Ile	Pro	Ala	Thr	Thr	Arg	Trp	Leu	Phe	Leu	Glu	Ser	Glu	Gly
65					70					75					80
Gly	Arg	Arg	Cys	Leu	Gly	Ser	Trp	Gly	Cys	Leu	Gly	Ser	Glu	Pro	Val
			85					90					95		
Arg	Val	Ser	Pro	Ala	Cys	Pro	Ser	Ile	Ser	Trp					
			100				105								

<210> 4329
<211> 3192
<212> DNA
<213> Homo sapiens

<400> 4329

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120
tgtacctaaa actttggctc gaaagcgaat ctggaataaa aagtacccca tttgtatcga
180
gcttggtcag caagatgact ttatgtctaa agctcagact gataaggaga cttcagaaga
240
gaagccgcca gctggaggaa gggaggaccc ttagaagcca ccccgccctc aggaggaaca
300
agatctagcc agcgagatca gatactctat ctctttggga gaactggccg agaaaaagag
360
gaatggttta ggagatttat tctggcatct aagctaaagt cggaaatcaa gaagtcatcg
420

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ggtgtctctg gaggtaaacc agggcttttg cctgcacaca gcagacacaa cagtccgtcc
480
gggcacctga cccacagccg cagcagcagc aaaggcagtg tggaggagat catgtcacag
540
ccaaagcaga aggagctggc aggcagcgtg cggcagaaga tgcttctcga ctacagcgtg
600
tacatgggca ggtgtgtccc ccaggaaagc cgaagccccc agaggagccc cctgcagagt
660
gcggagagca gccccacagc tgggaagaag ttgccagagg ttccacccct tgaggaggaa
720
gaacaggaag cctgggtgaa tgccttgctt ggaagaatat tttgggactt cttaggagag
780
aaatactggt ctgatctggt gtctaagaag atccaaatga aactcagcaa aataaagctc
840
ccctacttta tgaatgagct cactctgacg gaacttgaca tgggcgtggc tgtgccaaaa
900
atcctccagg ccttcaagcc ttacgttgat caccaaggac tctggattga tttggaaatg
960
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1020
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1080
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1140
gacgatgccc cagagcccgc gggggagaca aacagctcct cccaggggga agggtacgtt
1200
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1260
ttccaaaaag caacagagac agagtttata aaaaganaga tcgaagaagt ctccaacaca
1320
cccctgctgc tcactgttga agtacagaa tgtagaggaa ccttggcggt caacattcca
1380
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1440
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1500
aagaaactgg agcaagagtt tcagaaagtt tttgtcatgc aaacatggga tgatgtttat
1560
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1620
cctgtggagg ctgctgatcg gccatgatgg gtgatgtcag atgttcccca tattgtgaca
1680
tcgagctgga tgtgtggggt tcttggccgc catctgtact gtagcactgg cctctgtgcc
1740
acagctactg tttcttaaag gactgcttct gccctctgcc tgccagtgcc cattccactg
1800
tgaggtgtca ttccctgcat ctagtgacaa ctgtctggat tgcctgctgc aaagctttga
1860
tttggcaaag gagaccatgg aagaatcatg gtggatccag aagttatacg tgacccacac
1920
catggctttt aaaagtctac ccatgtttgt ggcagcaaat gagcacagta agagcaaagc
1980
tgaacaactt gcctcctcta ctcctccaaa gctttcttc aggcagccgg tgcacagtgg
2040
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3522

acttttttcac ttctatactt tgtatgcggc cttccacact tccagagaat gtcagtgtgc
2100
aatgtgtctg gagggtgggg agaggaattc tgtgagcctt ttcatttcgg tgacagaaga
2160
gatgggcaga gcaacttatt ttccacatta aattgtgcat ttgggaagca agtagccata
2220
gtacacacac aacacgctat cagcttgggt aaggacagtg ggatttatgt gaacatcagg
2280
caaagccatg agatcaaacc atcccaagcc tttcaccaat gaggtacaac cacctggggg
2340
ctagctaatc ttgaatgttt tcctgagaca ggagcgtatg tgaaaacatc aaacactgca
2400
catgacagga tgggtcctct catacagatg ggatgggggtt agaaagccag agccagtttt
2460
tccatctggc gtttcctgtg tcctccaggt ttatatggga atcgaaacag tttgttaatc
2520
tgattgggag agttccatgg gcagatttcc cttcctgaag gccaaaacgg agaactgctc
2580
tctttaatta tttcaagagt caagaccaaa agtttgctca gcatcacact acatctcaaa
2640
attaatgttg ccaacttaat tttgtgcatt tgtgtcagaa tgtttagttt acaaggttgg
2700
gggctctctt tgcttcgaga agtaaaccta ataccatttt tttattgttt aaagctgcat
2760
tcaacgtcaa aattaccttg ggtaactttt gataacttac atgtgtggac aaagctaata
2820
gtggtttttt aaacagcacc ttgcctgaac atgactttaa agaaattaat atattgaaaa
2880
catgtttgaa cccttatttt aattgcacca ttaaaacatt tgacttaaat tgtttgacca
2940
ttccagttgg tgtactgttc tgattttttcg ttgtgtaggc cgatctgcct gtcagagtcc
3000
acgtgtcctg gtcactggtc tttataattg ttgtgcaata actaaaggct aaggactaga
3060
tgcactatcg tgtaaagaga ttacacatga ctgtaccatg ttgcacttaa tcaaatagta
3120
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3180
aaaaaaaaaa aa
3192

<210> 4330
<211> 371
<212> PRT
<213> Homo sapiens

<400> 4330
Met Ser Gln Pro Lys Gln Lys Glu Leu Ala Gly Ser Val Arg Gln Lys
1   5   10   15
Met Leu Leu Asp Tyr Ser Val Tyr Met Gly Arg Cys Val Pro Gln Glu
                20   25   30
Ser Arg Ser Pro Gln Arg Ser Pro Leu Gln Ser Ala Glu Ser Ser Pro
        35   40   45
Thr Ala Gly Lys Lys Leu Pro Glu Val Pro Pro Ser Glu Glu Glu Glu

3523

```
        50                      55                      60
Gln Glu Ala Trp Val Asn Ala Leu Leu Gly Arg Ile Phe Trp Asp Phe
65                      70                      75                      80
Leu Gly Glu Lys Tyr Trp Ser Asp Leu Val Ser Lys Lys Ile Gln Met
                85                      90                      95
Lys Leu Ser Lys Ile Lys Leu Pro Tyr Phe Met Asn Glu Leu Thr Leu
                100                     105                     110
Thr Glu Leu Asp Met Gly Val Ala Val Pro Lys Ile Leu Gln Ala Phe
                115                     120                     125
Lys Pro Tyr Val Asp His Gln Gly Leu Trp Ile Asp Leu Glu Met Ser
        130                     135                     140
Tyr Asn Gly Ser Phe Leu Met Thr Leu Glu Thr Lys Met Asn Leu Pro
145                     150                     155                     160
Lys Leu Gly Lys Glu Pro Leu Val Glu Ala Leu Lys Val Gly Glu Ile
                165                     170                     175
Gly Lys Glu Gly Cys Arg Pro Arg Ala Phe Cys Leu Ala Asp Ser Asp
                180                     185                     190
Glu Glu Ser Ser Ser Ala Gly Ser Ser Glu Glu Asp Asp Ala Pro Glu
                195                     200                     205
Pro Ala Gly Glu Thr Asn Ser Ser Ser Gln Gly Glu Gly Tyr Val Gly
        210                     215                     220
Gly His Arg Thr Ser Lys Ile Met Arg Phe Val Asp Lys Ile Thr Lys
225                     230                     235                     240
Ser Lys Tyr Phe Gln Lys Ala Thr Glu Thr Glu Phe Ile Lys Arg Xaa
                245                     250                     255
Ile Glu Glu Val Ser Asn Thr Pro Leu Leu Leu Thr Val Glu Val Gln
                260                     265                     270
Glu Cys Arg Gly Thr Leu Ala Val Asn Ile Pro Pro Pro Pro Thr Asp
        275                     280                     285
Arg Val Trp Tyr Gly Phe Arg Lys Pro Pro His Val Glu Leu Lys Ala
        290                     295                     300
Arg Pro Lys Leu Gly Glu Arg Glu Val Thr Leu Val His Val Thr Asp
305                     310                     315                     320
Trp Ile Glu Lys Lys Leu Glu Gln Glu Phe Gln Lys Val Phe Val Met
                325                     330                     335
Pro Asn Met Asp Asp Val Tyr Ile Thr Ile Met His Ser Ala Met Asp
                340                     345                     350
Pro Arg Ser Thr Ser Cys Leu Leu Lys Asp Pro Pro Val Glu Ala Ala
        355                     360                     365
Asp Arg Pro
        370
```

```
<210> 4331
<211> 1355
<212> DNA
<213> Homo sapiens

<400> 4331
gaaaaatatt ttaaccataa ggctcttcag cttcttcact gtttccctct ggacatacga
60
ttaaaagatg gcagtttatt ttggcagtca ccaaagaggc caccctctcc aataaaattt
120
gatttaaatg agcctttgca cctcagtttc cttcagaatg ctgcaaaact atatgctaca
180
```

                                    3524

```
gtatattgta ttccatttgc agaagaggac ttatcagcag atgccctctt gaatattctt
240
tcagaagtaa agattcagga attcaagcct tccaataagg ttgttcaaac agatgaaact
300
gcaaggaaac cagaccatgt tcctattagc agtgaagatg agaggaatgc aattttccaa
360
ctagaaaagg ctattttatc taatgaagcc accaaaagtg accttcagat ggcagtgctt
420
tcatttgaaa aagatgatga tcataatgga cacatagatt tcatcacagc tgcatcaaat
480
cttcgtgcca aaatgtacag cattgaacca gctgaccgtt tcaaaacaaa gcgcatagct
540
ggtaaaatta tacctgctat agcaacaacc actgctacag tttctggctt ggttgccttg
600
gagatgatca aagtaactgg tggctatcca tttgaagctt acaaaaattg tttctcttaac
660
ttagccattc caattgtagt atttacagag acaactgaag taaggaaaac taaaatcaga
720
aatggaatat catttacaat ttgggatcga tggaccgtac atggaaaaga agatttcacc
780
ctcttggatt tcataaatgc agtcaaagag aagtatggaa ttgagccaac aatggtggta
840
cagggagtca aaatgcttta tgttcctgta atgcctggtc atgcaaaaag attgaagtta
900
acaatgcata aacttgtaaa acctactact gaaagaaat atgtggatct tactgtgtca
960
tttgctccag acattgatgg agatgaagat ttgccgggac ctccagtaag atactacttc
1020
agtcatgaca ctgattaata caagttgtct taacgttact ccaggaccac ttgatttggg
1080
aaagagtgca cttaattcag aagctaaaga aaatcagttc ataatactat ggatttctct
1140
ttcattaagc cttaatttta agggaaacat cagtaagaaa ctgcactgaa gaattataaa
1200
acattttggg gcatagcata cacttgtcta acggttcaca cgtggctatg atcacaagca
1260
actttgaact ggaatgctat ttataaaagt tttgtgtatt aatctgtgta ttaatctctc
1320
tggataaaaa gaaggaaaaa atatgtatga ccggt
1355
```

```
<210> 4332
<211> 345
<212> PRT
<213> Homo sapiens
```

```
<400> 4332
Glu Lys Tyr Phe Asn His Lys Ala Leu Gln Leu Leu His Cys Phe Pro
1               5                   10                  15
Leu Asp Ile Arg Leu Lys Asp Gly Ser Leu Phe Trp Gln Ser Pro Lys
            20                  25                  30
Arg Pro Pro Ser Pro Ile Lys Phe Asp Leu Asn Glu Pro Leu His Leu
        35                  40                  45
Ser Phe Leu Gln Asn Ala Ala Lys Leu Tyr Ala Thr Val Tyr Cys Ile
```

```
         50                      55                      60
Pro Phe Ala Glu Glu Asp Leu Ser Ala Asp Ala Leu Leu Asn Ile Leu
65                      70                      75                      80
Ser Glu Val Lys Ile Gln Glu Phe Lys Pro Ser Asn Lys Val Val Gln
                85                      90                      95
Thr Asp Glu Thr Ala Arg Lys Pro Asp His Val Pro Ile Ser Ser Glu
                100                     105                     110
Asp Glu Arg Asn Ala Ile Phe Gln Leu Glu Lys Ala Ile Leu Ser Asn
                .115                    120                     125
Glu Ala Thr Lys Ser Asp Leu Gln Met Ala Val Leu Ser Phe Glu Lys
        130                     135                     140
Asp Asp Asp His Asn Gly His Ile Asp Phe Ile Thr Ala Ala Ser Asn
145                     150                     155                     160
Leu Arg Ala Lys Met Tyr Ser Ile Glu Pro Ala Asp Arg Phe Lys Thr
                165                     170                     175
Lys Arg Ile Ala Gly Lys Ile Ile Pro Ala Ile Ala Thr Thr Thr Ala
                180                     185                     190
Thr Val Ser Gly Leu Val Ala Leu Glu Met Ile Lys Val Thr Gly Gly
                195                     200                     205
Tyr Pro Phe Glu Ala Tyr Lys Asn Cys Phe Leu Asn Leu Ala Ile Pro
        210                     215                     220
Ile Val Val Phe Thr Glu Thr Thr Glu Val Arg Lys Thr Lys Ile Arg
225                     230                     235                     240
Asn Gly Ile Ser Phe Thr Ile Trp Asp Arg Trp Thr Val His Gly Lys
                245                     250                     255
Glu Asp Phe Thr Leu Leu Asp Phe Ile Asn Ala Val Lys Glu Lys Tyr
                260                     265                     270
Gly Ile Glu Pro Thr Met Val Val Gln Gly Val Lys Met Leu Tyr Val
        275                     280                     285
Pro Val Met Pro Gly His Ala Lys Arg Leu Lys Leu Thr Met His Lys
        290                     295                     300
Leu Val Lys Pro Thr Thr Glu Lys Lys Tyr Val Asp Leu Thr Val Ser
305                     310                     315                     320
Phe Ala Pro Asp Ile Asp Gly Asp Glu Asp Leu Pro Gly Pro Pro Val
                325                     330                     335
Arg Tyr Tyr Phe Ser His Asp Thr Asp
                340                     345
```

```
<210> 4333
<211> 1278
<212> DNA
<213> Homo sapiens

<400> 4333
cggccgcagc gccgtctgct cagcgcccgg gtcaatagga gccagtcctt cgcaggcgtc
60
ctcggcagcc acgagcgggg gcccaggagt ttcccggtct tcagcccgcc ggggcccca
120
cggaagcccc ccgcgctctc ccgagtgtcc aggatgtttt ccgtggctca cccagccgcc
180
aaggtgccgc agcccgagcg gctggacctg gtgtacacgg cgctgaagcg gggcctgacg
240
gcctacttgg aagtgcacca gcaggagcaa gagaaactcc aggggcagat aagggagtcc
300
```

aagaggaatt cccgcttggg cttcctgtat gatctggaca agcaagtcaa gtccattgaa
360
cgcttcctgc gacgactgga gttccatgcc agcaagatcg atgagctgta tgaggcatac
420
tgtgtccagc ggcgtctccg ggatggtgcc tacaacatgg tccgtgccta caccactggg
480
tccccgggaa gccgagaggc ccgggacagc ctggcagagg ccactcgggg gcatcgcgag
540
tacacggagg tagggatgg gggcccatga agcagaggca cagggtgtgg cagggctagt
600
ggctggccct tgaccccctc ctgtccctgc ccctccctcc caagcatgtg tctgctggag
660
agcgagctgg aggcacagct gggcgagttt catctccgaa tgaaagggct ggctggcttc
720
gccaggctgt gtgtaggcga tcagtatgag atctgcatga aatatgggcg tcagcgctgg
780
aaactacggg gccgaattga gggtagtgga aagcaggtgt gggacagtga agaaaccatc
840
tttctccctc tactcacgga atttctgtct attaaggtga cagaactgaa gggcctggcc
900
aaccatgtgg ttgtgggcag tgtctcctgt gagaccaagg acctgtttgc cgccctgccc
960
caggttgtgg ctgtggatat caatgacctt ggtaccatca agctcagcct ggaagtcaca
1020
tggagcccct tcgacaagga tgaccagccc tcagctgctt cttctgtcaa caaggcctcc
1080
acagtcacca agcgcttctc cacctatagc cagagcccac cggacacacc ctcacttcgg
1140
gaacaggctt tctataacat gctgcgacgg caggaggagc tggagaatgg gacagcatgg
1200
tccctgtcat ctgaatcttc agacgactca tccagcccac agctctcagg cactgcccgc
1260
cactcaccag cccctagg
1278

<210> 4334
<211> 189
<212> PRT
<213> Homo sapiens

<400> 4334
Arg Pro Gln Arg Arg Leu Leu Ser Ala Arg Val Asn Arg Ser Gln Ser
  1   5   10   15
Phe Ala Gly Val Leu Gly Ser His Glu Arg Gly Pro Arg Ser Phe Pro
            20   25   30
Val Phe Ser Pro Pro Gly Pro Pro Arg Lys Pro Pro Ala Leu Ser Arg
        35   40   45
Val Ser Arg Met Phe Ser Val Ala His Pro Ala Ala Lys Val Pro Gln
    50   55   60
Pro Glu Arg Leu Asp Leu Val Tyr Thr Ala Leu Lys Arg Gly Leu Thr
65   70   75   80
Ala Tyr Leu Glu Val His Gln Gln Glu Gln Glu Lys Leu Gln Gly Gln
            85   90   95
Ile Arg Glu Ser Lys Arg Asn Ser Arg Leu Gly Phe Leu Tyr Asp Leu

```
                100                    105                    110
Asp Lys Gln Val Lys Ser Ile Glu Arg Phe Leu Arg Arg Leu Glu Phe
            115                    120                    125
His Ala Ser Lys Ile Asp Glu Leu Tyr Glu Ala Tyr Cys Val Gln Arg
        130                    135                    140
Arg Leu Arg Asp Gly Ala Tyr Asn Met Val Arg Ala Tyr Thr Thr Gly
145                    150                    155                    160
Ser Pro Gly Ser Arg Glu Ala Arg Asp Ser Leu Ala Glu Ala Thr Arg
                165                    170                    175
Gly His Arg Glu Tyr Thr Glu Val Gly Asp Gly Gly Pro
            180                    185
```

<210> 4335
<211> 1211
<212> DNA
<213> Homo sapiens

<400> 4335
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cacaacctgg acaagcgcag tgctcactag tgggagagga agggccaaga tctggctggg
60
gatggggagg agtggcttcc cccacttaaa acatttgtgc cctctgtatc cccattccag
120
ctggccttgg gtgcggcact cgtgaatgta cagatccccc tgctcctggg ccagctggta
180
gaggtcgtgg ccaagtacac aagggaccac gtagggagtt tcatgactga gtctcagaat
240
ctcagcaccc acctgcttat cctctatggt gtccagggac tgctgacctt cgggtacctg
300
gtgctgctgt cccacgttgg cgagcgcatg gctgtggaca tgcggagggc cctcttcagc
360
tccctgctcc gacaagacat caccttcttt gacgccaata agacagggca gctggtgagc
420
cgcttgacaa ctgacgtgca ggagtttaag tcatccttca gcttgtcat ctcccagggg
480
ctgcgaagct gcacccaggt ggcaggctgc ctggtgtccc tgtccatgct gtcgacacgc
540
ctcacgctgc tgctgatggt ggccacacca gccctgatgg gagtgggcac cctgatgggc
600
tcaggcctcc gaaaattgtc tcgccagtgt caggagcaga tcgccagggc aatgggcgta
660
gcagacgagg ccctgggcaa tgtgcggact gtgcgtgcct tcgccatgga gcaacgggaa
720
gaggagcgct atggggcaga gctggaagcc tgccgctgcc gggcagagga gctgggccgc
780
ggcatcgcct tgttccaagg gctttccaac atcgccttca actgcatggt cttgggtacc
840
ctatttattg ggggctccct tgtggccgga cagcagctga caggggagac cctcatgtcc
900
ttcctggtgg cctcccagac agtgcaaagc ttcctccgtg ttgcaccctg tccgaattcc
960
cttccgctgc aggctgtgac actccatgca tggaaggacc atccttgaca ggctgtgtga
1020
gctgcccttc cccatgcctg ccacttccag ggatgacaag ctgacccctg tccccacaca
1080
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cccacccctt atagcttatt gctttgcgtt ggtccaaaac cacccgctca gctgagcctc
1140
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1200
tgtgctcgcg a
1211

<210> 4336
<211> 325
<212> PRT
<213> Homo sapiens

<400> 4336
Trp Glu Arg Lys Gly Gln Asp Leu Ala Gly Asp Gly Glu Glu Trp Leu
1   5   10   15
Pro Pro Leu Lys Thr Phe Val Pro Ser Val Ser Pro Phe Gln Leu Ala
            20   25   30
Leu Gly Ala Ala Leu Val Asn Val Gln Ile Pro Leu Leu Leu Gly Gln
        35   40   45
Leu Val Glu Val Val Ala Lys Tyr Thr Arg Asp His Val Gly Ser Phe
        50   55   60
Met Thr Glu Ser Gln Asn Leu Ser Thr His Leu Leu Ile Leu Tyr Gly
65   70   75   80
Val Gln Gly Leu Leu Thr Phe Gly Tyr Leu Val Leu Leu Ser His Val
                85   90   95
Gly Glu Arg Met Ala Val Asp Met Arg Arg Ala Leu Phe Ser Ser Leu
            100   105   110
Leu Arg Gln Asp Ile Thr Phe Phe Asp Ala Asn Lys Thr Gly Gln Leu
            115   120   125
Val Ser Arg Leu Thr Thr Asp Val Gln Glu Phe Lys Ser Ser Phe Lys
        130   135   140
Leu Val Ile Ser Gln Gly Leu Arg Ser Cys Thr Gln Val Ala Gly Cys
145   150   155   160
Leu Val Ser Leu Ser Met Leu Ser Thr Arg Leu Thr Leu Leu Leu Met
                165   170   175
Val Ala Thr Pro Ala Leu Met Gly Val Gly Thr Leu Met Gly Ser Gly
            180   185   190
Leu Arg Lys Leu Ser Arg Gln Cys Gln Glu Gln Ile Ala Arg Ala Met
            195   200   205
Gly Val Ala Asp Glu Ala Leu Gly Asn Val Arg Thr Val Arg Ala Phe
        210   215   220
Ala Met Glu Gln Arg Glu Glu Glu Arg Tyr Gly Ala Glu Leu Glu Ala
225   230   235   240
Cys Arg Cys Arg Ala Glu Glu Leu Gly Arg Gly Ile Ala Leu Phe Gln
                245   250   255
Gly Leu Ser Asn Ile Ala Phe Asn Cys Met Val Leu Gly Thr Leu Phe
            260   265   270
Ile Gly Gly Ser Leu Val Ala Gly Gln Gln Leu Thr Gly Gly Asp Leu
            275   280   285
Met Ser Phe Leu Val Ala Ser Gln Thr Val Gln Ser Phe Leu Arg Val
            290   295   300
Ala Pro Cys Pro Asn Ser Leu Pro Leu Gln Ala Val Thr Leu His Ala
305   310   315   320
Trp Lys Asp His Pro

325

```
<210> 4337
<211> 461
<212> DNA
<213> Homo sapiens

<400> 4337
tctattatgt tgtcctgatt acatatcagc aaaatgtttt tctggggcat tgtgcataaa
60
acaaaggaga aaacaacatc tctagccggc cagcgtgcct gtccctccct cccgcagagg
120
cctgggaggc tgagggtgag gaaggccagc tgtgctggct gcagagggct ttgctgtttc
180
tccacagagc agcaggtcgc cccttccctt ctccctccct ccacctcacc tccatgggct
240
ccactggatg ggaaccatgt gcttgttctc cccacccta gactgggatc tcctggggca
300
gaagaggctt cccaagtggc acagacagag ccaggctgac tgaatgtgag attcatgaat
360
gaacagtgat accaggcata gccctgccct ttagcatcct gagggccacg tggagttttc
420
tgcaacactg cccgccgtgt tccagcatct gccttccact t
461


<210> 4338
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4338
Met Asn Leu Thr Phe Ser Gln Pro Gly Ser Val Cys Ala Thr Trp Glu
1               5                   10                  15
Ala Ser Ser Ala Pro Gly Asp Pro Ser Leu Gly Val Gly Arg Thr Ser
            20                  25                  30
Thr Trp Phe Pro Ser Ser Gly Ala His Gly Gly Glu Val Glu Gly Gly
        35                  40                  45
Arg Arg Glu Gly Ala Thr Cys Cys Ser Val Glu Lys Gln Gln Ser Pro
    50                  55                  60
Leu Gln Pro Ala Gln Leu Ala Phe Leu Thr Leu Ser Leu Pro Gly Leu
65                  70                  75                  80
Cys Gly Arg Glu Gly Gln Ala Arg Trp Pro Ala Arg Asp Val Val Phe
                85                  90                  95
Ser Phe Val Leu Cys Thr Met Pro Gln Lys Asn Ile Leu Leu Ile Cys
                100                 105                 110
Asn Gln Asp Asn Ile Ile
            115


<210> 4339
<211> 5269
<212> DNA
<213> Homo sapiens

<400> 4339
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nnagccatgc ccacgaactt tacggtggtg cccgtggagg ctcacgccga cggcggcggg
60
gacgagactg ccgagcggac ggaggctccg ggcacccccg agggccccga gcccgagcgc
120
cccagcccgg gagatggaaa tccaagagaa aacagcccat tcctcaacaa tgtcgaggtg
180
gaacaagaga gcttctttga agggaagaac atggcacttt tcgaggagga gatggacagt
240
aaccccatgg tgtcctcgct gctcaacaag ctggccaact acaccaacct gagccagggc
300
gtggtggagc acgaggagga cgaggagagc cggcggcggg aggccaaggc tccgcgcatg
360
ggcaccttca tcggcgtcta cctgccgtgc ctgcagaaca tcctgggcgt catcctcttc
420
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480
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3533

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<210> 4340
<211> 1088
<212> PRT
<213> Homo sapiens

<400> 4340
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Gly Gly Asp Glu Thr Ala Glu Arg Thr Glu Ala Pro Gly Thr Pro Glu
            20   25   30
Gly Pro Glu Pro Glu Arg Pro Ser Pro Gly Asp Gly Asn Pro Arg Glu
            35   40   45
Asn Ser Pro Phe Leu Asn Asn Val Glu Val Glu Gln Glu Ser Phe Phe
        50   55   60
Glu Gly Lys Asn Met Ala Leu Phe Glu Glu Glu Met Asp Ser Asn Pro
65   70   75   80
Met Val Ser Ser Leu Leu Asn Lys Leu Ala Asn Tyr Thr Asn Leu Ser
                85   90   95
Gln Gly Val Val Glu His Glu Glu Asp Glu Glu Ser Arg Arg Arg Glu
            100   105   110
Ala Lys Ala Pro Arg Met Gly Thr Phe Ile Gly Val Tyr Leu Pro Cys
        115   120   125
Leu Gln Asn Ile Leu Gly Val Ile Leu Phe Leu Arg Leu Thr Trp Ile
    130   135   140
Val Gly Val Ala Gly Val Leu Glu Ser Phe Leu Ile Val Ala Met Cys
145   150   155   160
Cys Thr Cys Thr Met Leu Thr Ala Ile Ser Met Ser Ala Ile Ala Thr
                165   170   175
Asn Gly Val Val Pro Ala Gly Gly Ser Tyr Tyr Met Ile Ser Arg Ser
            180   185   190
Leu Gly Pro Glu Phe Gly Gly Ala Val Gly Leu Cys Phe Tyr Leu Gly
            195   200   205
Thr Thr Phe Ala Gly Ala Met Tyr Ile Leu Gly Thr Ile Glu Ile Phe
    210   215   220
Leu Thr Tyr Ile Ser Pro Gly Ala Ala Ile Phe Gln Ala Glu Ala Ala
225   230   235   240
Gly Gly Glu Ala Ala Ala Met Leu His Asn Met Arg Val Tyr Gly Thr
                245   250   255
Cys Thr Leu Val Leu Met Ala Leu Val Val Phe Val Gly Val Lys Tyr

3534

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                      260                      265                    270
     Val Asn Lys Leu Ala Leu Val Phe Leu Ala Cys Val Val Leu Ser Ile
              275                      280                    285
     Leu Ala Ile Tyr Ala Gly Val Ile Lys Ser Ala Phe Asp Pro Pro Asp
          290                      295                    300
     Ile Pro Val Cys Leu Leu Gly Asn Arg Thr Leu Ser Arg Arg Ser Phe
     305                      310                    315                    320
     Asp Ala Cys Val Lys Ala Tyr Gly Ile His Asn Asn Ser Ala Thr Ser
                      325                      330                    335
     Ala Leu Trp Gly Leu Phe Cys Asn Gly Ser Gln Pro Ser Ala Ala Cys
                  340                      345                    350
     Asp Glu Tyr Phe Ile Gln Asn Asn Val Thr Glu Ile Gln Gly Ile Pro
              355                      360                    365
     Gly Ala Ala Ser Gly Val Phe Leu Glu Asn Leu Trp Ser Thr Tyr Ala
          370                      375                    380
     His Ala Gly Ala Phe Val Glu Lys Lys Gly Val Pro Ser Val Pro Val
     385                      390                    395                    400
     Ala Glu Glu Ser Arg Ala Ser Ala Leu Pro Tyr Val Leu Thr Asp Ile
                      405                      410                    415
     Ala Ala Ser Phe Thr Leu Leu Val Gly Ile Tyr Phe Pro Ser Val Thr
                  420                      425                    430
     Gly Ile Met Ala Gly Ser Asn Arg Ser Gly Asp Leu Lys Asp Ala Gln
              435                      440                    445
     Lys Ser Ile Pro Thr Gly Thr Ile Leu Ala Ile Val Thr Thr Ser Phe
          450                      455                    460
     Ile Tyr Leu Ser Cys Ile Val Leu Phe Gly Ala Cys Ile Glu Gly Val
     465                      470                    475                    480
     Val Leu Arg Asp Lys Phe Gly Glu Ala Leu Gln Gly Asn Leu Val Ile
                      485                      490                    495
     Gly Met Leu Ala Trp Pro Ser Pro Trp Val Ile Val Ile Gly Ser Phe
                  500                      505                    510
     Phe Ser Thr Cys Gly Ala Gly Leu Gln Thr Leu Thr Gly Ala Pro Arg
              515                      520                    525
     Leu Leu Gln Ala Ile Ala Arg Asp Gly Ile Val Pro Phe Leu Gln Val
          530                      535                    540
     Phe Gly His Gly Lys Ala Asn Gly Glu Pro Thr Trp Ala Leu Leu Leu
     545                      550                    555                    560
     Thr Val Leu Ile Cys Glu Thr Gly Ile Leu Ile Ala Ser Leu Asp Ser
                      565                      570                    575
     Val Ala Pro Ile Leu Ser Met Phe Phe Leu Met Cys Tyr Leu Phe Val
                  580                      585                    590
     Asn Leu Ala Cys Ala Val Gln Thr Leu Leu Arg Thr Pro Asn Trp Arg
              595                      600                    605
     Pro Arg Phe Lys Phe Tyr His Trp Thr Leu Ser Phe Leu Gly Met Ser
          610                      615                    620
     Leu Cys Leu Ala Leu Met Phe Ile Cys Ser Trp Tyr Tyr Ala Leu Ser
     625                      630                    635                    640
     Ala Met Leu Ile Ala Gly Cys Ile Tyr Lys Tyr Ile Glu Tyr Arg Gly
                  645                      650                    655
     Ala Glu Lys Glu Trp Gly Asp Gly Ile Arg Gly Leu Ser Leu Asn Ala
              660                      665                    670
     Ala Arg Tyr Ala Leu Leu Arg Val Glu His Gly Pro Pro His Thr Lys
          675                      680                    685
     Asn Trp Arg Pro Gln Val Leu Val Met Leu Asn Leu Asp Ala Glu Gln
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3535

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            690                   695                   700
Ala Val Lys His Pro Arg Leu Leu Ser Phe Thr Ser Gln Leu Lys Ala
705                   710                   715                   720
Gly Lys Gly Leu Thr Ile Val Gly Ser Val Leu Glu Gly Thr Tyr Leu
                  725                   730                   735
Asp Lys His Met Glu Ala Gln Arg Ala Glu Glu Asn Ile Arg Ser Leu
                  740                   745                   750
Met Ser Thr Glu Lys Thr Lys Gly Phe Cys Gln Leu Val Val Ser Ser
                  755                   760                   765
Ser Leu Arg Asp Gly Met Ser His Leu Ile Gln Ser Ala Gly Leu Gly
          770                   775                   780
Gly Leu Lys His Asn Thr Val Leu Met Ala Trp Pro Ala Ser Trp Lys
785                   790                   795                   800
Gln Glu Asp Asn Pro Phe Ser Trp Lys Asn Phe Val Asp Thr Val Arg
                  805                   810                   815
Asp Thr Thr Ala Ala His Gln Ala Leu Leu Val Ala Lys Asn Val Asp
                  820                   825                   830
Ser Phe Pro Gln Asn Gln Glu Arg Phe Gly Gly Gly His Ile Asp Val
          835                   840                   845
Trp Trp Ile Val His Asp Gly Gly Met Leu Met Leu Leu Pro Phe Leu
          850                   855                   860
Leu Arg Gln His Lys Val Trp Arg Lys Cys Arg Met Arg Ile Phe Thr
865                   870                   875                   880
Val Ala Gln Val Asp Asp Asn Ser Ile Gln Met Lys Lys Asp Leu Gln
                  885                   890                   895
Met Phe Leu Tyr His Leu Arg Ile Ser Ala Glu Val Glu Val Val Glu
                  900                   905                   910
Met Val Glu Asn Asp Ile Ser Ala Phe Thr Tyr Glu Arg Thr Leu Met
                  915                   920                   925
Met Glu Gln Arg Ser Gln Met Leu Lys Gln Met Gln Leu Ser Lys Asn
          930                   935                   940
Glu Gln Glu Arg Glu Ala Gln Leu Ile His Asp Arg Asn Thr Ala Ser
945                   950                   955                   960
His Thr Ala Ala Ala Ala Arg Thr Gln Ala Pro Pro Thr Pro Asp Lys
                  965                   970                   975
Val Gln Met Thr Trp Thr Arg Glu Lys Leu Ile Ala Glu Lys Tyr Arg
          980                   985                   990
Ser Arg Asp Thr Ser Leu Ser Gly Phe Lys Asp Leu Phe Ser Met Lys
          995                   1000                  1005
Pro Glu Trp Gly Asn Leu Asp Gln Ser Asn Val Arg Arg Met His Thr
    1010                  1015                  1020
Ala Val Lys Leu Asn Gly Val Val Leu Asn Lys Ser Gln Asp Ala Gln
1025                  1030                  1035                  1040
Leu Val Leu Leu Asn Met Pro Gly Pro Pro Lys Asn Arg Gln Gly Asp
                  1045                  1050                  1055
Glu Asn Tyr Met Glu Phe Leu Glu Val Leu Thr Glu Gly Leu Asn Arg
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Val Leu Leu Val Arg Gly Gly Gly Arg Glu Val Ile Thr Ile Tyr Ser
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<211> 693
<212> DNA
<213> Homo sapiens

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120
gacctgaggg agccatatgc atcaagtgag tgtttctcca taacagaata tttataagag
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aacatgtata gtgccctctt ttgagtgatg ccgacagaca ccaagccctc cttttcacca
240
agtcccaggc ttgcattcca gcctcttgag ctctgccctc tctcaggtgg atctttgtgt
300
tggaccttac gtttcagcaa cctcaccatg gccacataac ccacaacctt ttaaaacagt
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420
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693

<210> 4342
<211> 103
<212> PRT
<213> Homo sapiens

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            20   25   30
Lys Glu Gly Leu Val Ser Val Gly Ile Thr Gln Lys Arg Ala Leu Tyr
        35   40   45
Met Phe Ser Tyr Lys Tyr Ser Val Met Glu Lys His Ser Leu Asp Ala
    50   55   60
Tyr Gly Ser Leu Arg Ser Phe Phe Phe His Pro Leu Phe Leu Glu Lys
65   70   75   80
Lys Phe Phe Lys Ala Tyr Asn Leu Lys Ser Thr Ser Thr Tyr Ser Arg
                85   90   95
Asn Ile Val Ala Phe Ser Ile
                100

<210> 4343
<211> 499
<212> DNA
<213> Homo sapiens

<400> 4343

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aggctgccgc cgtcacctcc tcagcggctc cgagtcgtgc gaggcagggg accctttgcc
120

ttcagaacag ggcgcccgac gttgggcgcg tggacagagt cctccggcgg ccgcgccgct
180

gggccaggcg gagagaggcg gacggacttc aggggaggcc cgggccacgc cgcggaaact
240

acccgactcc ctggaggcgg ccaggaccga ccctgtcccg acaaaatgga gttccccgtg
300

tggcttcagc tcgcggcgcg ttcccagagc tcctcagtga tccggctttc ggattgttcg
360

cctttcatct catttgccgt tgtccaaatt ctaatttaaa actcatgtgt tacttgctgt
420

aaggttaaca aacgtacacc gcaaactgga taaagggata acttttatgt tgtgtatgtt
480

ttaccacaat aaaaataaa
499

<210> 4344
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4344
Met Ala Pro Ser Arg Pro Arg Leu Pro Pro Ser Pro Pro Gln Arg Leu
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Arg Val Val Arg Gly Arg Gly Pro Phe Ala Phe Arg Thr Gly Arg Pro
                20   25   30
Thr Leu Gly Ala Trp Thr Glu Ser Ser Gly Gly Arg Ala Ala Gly Pro
            35   40   45
Gly Gly Glu Arg Arg Thr Asp Phe Arg Gly Gly Pro Gly His Ala Ala
        50   55   60
Glu Thr Thr Arg Leu Pro Gly Gly Gly Gln Asp Arg Pro Cys Pro Asp
65   70   75   80
Lys Met Glu Phe Pro Val Trp Leu Gln Leu Ala Ala Arg Ser Gln Ser
                85   90   95
Ser Ser Val Ile Arg Leu Ser Asp Cys Ser Pro Phe Ile Ser Phe Ala
                100   105   110
Val Val Gln Ile Leu Ile
            115

<210> 4345
<211> 349
<212> DNA
<213> Homo sapiens

<400> 4345
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agcgttagtg ctgccgacnc tgagcgagcc gagccaaccc tcacccacat gagcatcacc
120

cgtctgcatg agcagaagct ggtgcagcat gtggtgtctc agaactgtga cgggctccac
180

ctgaggagtg ggctgncgcg cacggccatc tccgagctcc acgggaacat gtacattgaa
240
ggagtacgtg cgggtgttcg atgtgacgga gcgcactgcc ctccacagac accagacagg
300
ccggacctgc cacaagtgtg ggacccagct gcgggacacc attgtgcac
349

<210> 4346
<211> 116
<212> PRT
<213> Homo sapiens

<400> 4346
Ala Ser Ile Pro Asp Tyr Arg Gly Pro Asn Gly Val Trp Thr Leu Leu
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Gln Lys Gly Arg Ser Val Ser Ala Ala Asp Xaa Glu Arg Ala Glu Pro
            20   25   30
Thr Leu Thr His Met Ser Ile Thr Arg Leu His Glu Gln Lys Leu Val
        35   40   45
Gln His Val Val Ser Gln Asn Cys Asp Gly Leu His Leu Arg Ser Gly
    50   55   60
Leu Xaa Arg Thr Ala Ile Ser Glu Leu His Gly Asn Met Tyr Ile Glu
65   70   75   80
Gly Val Arg Ala Gly Val Arg Cys Asp Gly Ala His Cys Pro Pro Gln
                85   90   95
Thr Pro Asp Arg Pro Asp Leu Pro Gln Val Trp Asp Pro Ala Ala Gly
            100   105   110
His His Cys Ala
            115

<210> 4347
<211> 353
<212> DNA
<213> Homo sapiens

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gcactaggag gaggcgattc aggctgagac tcctccggga tctcgacgcc ccgaccgccg
120
ccccgggggct cgcgcgcagc gggtccagct gcacaaagcc gtccgctccg tcccgccgag
180
gccaggcagt gcagaggcag gagccgccgt cgggtagcga gatcttcact gccgagccca
240
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353

<210> 4348
<211> 72
<212> PRT
<213> Homo sapiens

<400> 4348
Asp Ser Ser Gly Ile Ser Thr Pro Arg Pro Pro Pro Arg Gly Ser Arg
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Ala Ala Gly Pro Ala Ala Gln Ser Arg Pro Leu Arg Pro Ala Glu Ala
            20   25   30
Arg Gln Cys Arg Gly Arg Ser Arg Arg Val Ala Arg Ser Ser Leu
        35   40   45
Pro Ser Pro Ser Ala Arg Pro Gly Arg Gly Gly Arg Pro Gly Pro Gly
    50   55   60
Gly Ser Ala Gly Cys Pro Gly Leu
65   70

<210> 4349
<211> 2040
<212> DNA
<213> Homo sapiens

<400> 4349
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120
ctcaccggca ccaggccctc gtgtggcccc cgactctggc acggaacctg ccctagtgcc
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360
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Leu Gln Pro Pro Pro Pro Gly Phe Glu Leu Phe Ser Cys Leu Ser Phe
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Gln Ser Ser Trp Gly Tyr Arg His Ser Pro Pro Arg Leu Ala Asn Phe
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Pro Ala Glu Val Asp Glu Glu Gly Lys Asp Ile Asn Pro His Ile Pro
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Gln Tyr Ile Ser Ser Val Pro Trp Tyr Ile Asp Pro Ser Lys Arg Pro
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Thr Leu Lys His Gln Arg Pro Gln Pro Glu Lys Gln Lys Gln Phe Ser
                85   90   95
Ser Ser Gly Glu Trp Tyr Lys Arg Gly Val Lys Glu Asn Ser Ile Ile
            100   105   110
Thr Lys Tyr Arg Lys Gly Ala Cys Glu Asn Cys Gly Ala Met Thr His
            115   120   125
Lys Lys Lys Asp Cys Phe Glu Arg Pro Arg Arg Val Gly Ala Lys Phe
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Phe Asp Tyr Asp Gly Lys Arg Asp Arg Trp Asn Gly Tyr Asn Pro Glu
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Arg Thr Leu Lys Ala Gln Lys Leu Gln Glu Glu Leu Ala Ser Gly Lys
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Lys Tyr Leu Arg Asn Leu Asp Pro Asn Ser Ala Tyr Tyr Asp Pro Lys
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3549

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  1                     5                      10                     15
Val Tyr Lys Asp Gly Arg Ala Gly Val Val Ala Asn Asp Ala Gly Asp
                20                     25                     30
Arg Val Thr Pro Ala Val Val Ala Tyr Ser Glu Asn Glu Glu Ile Val
                35                     40                     45
Gly Leu Ala Ala Lys Gln Ser Arg Ile Arg Asn Ile Ser Asn Thr Val
       50                     55                     60
Met Lys Val Lys Gln Ile Leu Gly Arg Ser Ser Ser Asp Pro Gln Ala
65                     70                     75                     80
Gln Lys Tyr Ile Ala Glu Ser Lys Cys Leu Val Ile Glu Lys Asn Gly
                85                     90                     95
Lys Leu Arg Tyr Glu Ile Asp Thr Gly Glu Glu Thr Lys Phe Val Asn
              100                    105                    110
Pro Glu Asp Val Ala Arg Leu Ile Phe Ser Lys Met Lys Glu Thr Ala
              115                    120                    125
His Ser Val Leu Gly Ser Asp Ala Asn Asp Val Val Ile Thr Val Pro
       130                    135                    140
Phe Asp Phe Gly Glu Lys Gln Lys Asn Ala Leu Gly Glu Ala Ala Arg
145                    150                    155                    160
Ala Ala Gly Phe Asn Val Leu Arg Leu Ile His Glu Pro Ser Ala Ala
              165                    170                    175
Leu Leu Ala Tyr Gly Ile Gly Gln Asp Ser Pro Thr Gly Lys Ser Asn
              180                    185                    190
Ile Leu Val Phe Lys Leu Gly Gly Thr Ser Leu Ser Leu Ser Val Met
       195                    200                    205
Glu Val Asn Ser Gly Ile Tyr Arg Val Leu Ser Thr Asn Thr Asp Asp
       210                    215                    220
Asn Ile Gly Gly Ala His Phe Thr Glu Thr Leu Ala Gln Tyr Leu Ala
225                    230                    235                    240
Ser Glu Phe Gln Arg Ser Phe Lys His Asp Val Arg Gly Asn Ala Arg
              245                    250                    255
Ala Met Met Lys Leu Thr Asn Ser Ala Glu Val Ala Lys His Ser Leu
              260                    265                    270
Ser Thr Leu Gly Ser Ala Asn Cys Phe Leu Asp Ser Leu Tyr Glu Gly
       275                    280                    285
Gln Asp Phe Asp Cys Asn Val Ser Arg Ala Arg Phe Glu Leu Leu Cys
       290                    295                    300
Ser Pro Leu Phe Asn Lys Cys Ile Glu Ala Ile Arg Gly Leu Leu Asp
305                    310                    315                    320
Gln Asn Gly Phe Thr Ala Asp Asp Ile Asn Lys Val Val Leu Cys Gly
              325                    330                    335
Gly Ser Ser Arg Ile Pro Lys Leu Gln Gln Leu Ile Lys Asp Leu Phe
              340                    345                    350
Pro Ala Val Glu Leu Leu Asn Ser Ile Pro Pro Asp Glu Val Ile Pro
              355                    360                    365
Ile Gly Ala Ala Ile Glu Ala Gly Ile Leu Ile Gly Lys Glu Asn Leu
       370                    375                    380
Leu Val Glu Asp Ser Leu Met Ile Glu Cys Ser Ala Arg Asp Ile Leu
385                    390                    395                    400
Val Lys Gly Val Asp Glu Ser Gly Ala Ser Arg Phe Thr Val Leu Phe
              405                    410                    415
Pro Ser Gly Thr Pro Leu Pro Ala Arg Arg Gln His Thr Leu Gln Ala
              420                    425                    430
Pro Gly Ser Ile Ser Ser Val Cys Leu Glu Leu Tyr Glu Ser Asp Gly
```

3550

```
            435                 440                 445
Lys Asn Ser Ala Lys Glu Glu Thr Lys Phe Ala Gln Val Val Leu Gln
      450                 455                 460
Asp Leu Asp Lys Lys Glu Asn Gly Leu Arg Asp Ile Leu Ala Val Leu
465                 470                 475                 480
Thr Met Lys Arg Asp Gly Ser Leu His Val Thr Cys Thr Asp Gln Glu
                  485                 490                 495
Thr Gly Lys Cys Glu Ala Ile Ser Ile Glu Ile Ala Ser
            500                 505
```

<210> 4357
<211> 421
<212> DNA
<213> Homo sapiens

<400> 4357
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cggccgggcc tgtttgttgg agctgcatcc tcctcatctg caggcgctgg aaaaccagac
60
acgatcggac atgcatgtgg ttctgcggcc aaagcacgcc ctttggttgt gaacttcatg
120
atacctgtgt gcagctctgt catttccact ctgctctgct gcacagaagg cagaagccct
180
ggccgtcccc tgctgtgttc ttcaggagaa acgtcagggg ccttcctcca aggttctcca
240
gccccacacc cctgtggagg aaggtgctct ccaccgcggt agtgggggcg cccctgctcc
300
tcggagcccg ctatgtcatg gcagaggcac gggagaagag gaggatgcgg ctcgtggtgg
360
atggcatggg cgcttttgc aggtctctaa aggtcggcct gcagatctcc ctggactact
420
g
421
```

<210> 4358
<211> 115
<212> PRT
<213> Homo sapiens

<400> 4358
```
Met Trp Phe Cys Gly Gln Ser Thr Pro Phe Gly Cys Glu Leu His Asp
1               5                  10                  15
Thr Cys Val Gln Leu Cys His Phe His Ser Ala Leu Leu His Arg Arg
              20                  25                  30
Gln Lys Pro Trp Pro Ser Pro Ala Val Phe Phe Arg Arg Asn Val Arg
          35                  40                  45
Gly Leu Pro Pro Arg Phe Ser Ser Pro Thr Pro Leu Trp Arg Lys Val
      50                  55                  60
Leu Ser Thr Ala Val Val Gly Ala Pro Leu Leu Leu Gly Ala Arg Tyr
65                  70                  75                  80
Val Met Ala Glu Ala Arg Glu Lys Arg Arg Met Arg Leu Val Val Asp
                  85                  90                  95
Gly Met Gly Arg Phe Cys Arg Ser Leu Lys Val Gly Leu Gln Ile Ser
              100                 105                 110
Leu Asp Tyr
```

115

<210> 4359
<211> 3661
<212> DNA
<213> Homo sapiens

<400> 4359
ncggccgagg gggcatcatg aagcgggctg gcggcgctgc gtcccgggcg gccgcgggcg
60
ggaggtgctt cccaaggacc gtagatgcct ctctagagca tgagctcagg caagagtgcc
120
cgctacaacc gcttctccgg ggggcccagc aatcttccca ccccagacgt caccacaggg
180
accagaatgg aaacgacctt cggacccgcc ttttcagccg tcaccaccat cacaaaagct
240
gacgggacca gcacctacaa gcagcactgc aggacaccct cctcctccag caccctttgcc
300
tactccccgc gggacgagga ggacagcatg cccccccatca gcactccccg ccgctccgac
360
tccgccatct ctgtccgctc cctgcactca gagtccagca tgtctctgcg ctccacattc
420
tcactgcccg aggaggagga ggagccggag ccactggtgt ttgcggagca gccctcggtg
480
aagctgtgct gtcagctctg ctgcagcgtc ttcaaagacc ccgtgatcac cacgtgtggg
540
cacacgttct gtaggagatg cgccttgaag tcagagaagt gtcccgtgga caacgtcaaa
600
ctgaccgtgg tggtgaacaa catcgcggtg gccgagcaga tcggggagct cttcatccac
660
tgccggcacg gctgccgggt agcgggcagc gggaagcccc ccatctttga ggtggacccc
720
cgagggtgcc ccttcaccat caagctcagc gcccggaagg accacgaggg cagctgtgac
780
tacaggcctg tgcggtgtcc caacaacccc agctgccccc cgctgctcag gatgaacctg
840
gaggcccacc tcaaggagtg cgagcacatc aaatgccccc actccaagta cgggtgcaca
900
tttattggga atcaggacac ctatgagaca cacttagaaa catgccgctt cgagggcctg
960
aaggagtttc tgcagcagac ggatgaccgc ttccacgaga tgcatgtggc tctggcccag
1020
aaggaccagg agatcgcctt cctgcgctcc atgctgggaa agctctcgga gaagatcgac
1080
cagctagaga agagcctgga gctcaagttt gacgtcctgg acgaaaacca gagcaagctc
1140
agcgaggacc tcatggagtt ccggcgggac gcatccatgt aaatgacga gctgtcccac
1200
atcaacgcgc ggctgaacat gggcatccta ggctcctacg accctcagca gatcttcaag
1260
tgcaaaggga cctttgtggg ccaccagggc cctgtgtggt gtctctgcgt ctactccatg
1320
ggtgacctgc tcttcagtgg ctcctctgac aagaccatca aggtgtggga cacatgtacc
1380

3552

acctacaagt gtcagaagac actggagggc catgatggca tcgtgctggc tctctgcatc
1440
caggggtgca aactctacag cggctctgca gactgcacca tcattgtgtg ggacatccag
1500
aacctgcaga aggtgaacac catccgggcc catgacaacc cggtgtgcac gctggtctcc
1560
tcacacaacg tgctcttcag cggctccctg aaggccatca aggtctggga catcgtgggc
1620
actgagctga agttgaagaa ggagctcaca ggcctcaacc actgggtgcg ggccctggtg
1680
gctgcccaga gctacctgta cagcggctcc taccagacaa tcaagatctg ggacatccga
1740
acccttgact gcatccacgt cctgcagacg tctggtggca gcgtctactc cattgctgtg
1800
acaaatcacc acattgtctg tggcacctac gagaacctca tccacgtgtg ggacattgag
1860
tccaaggagc aggtgcggac cctcacgggc cacgtgggca ccgtgtatgc cctggcggtc
1920
atctcgacgc cagaccagac caaagtcttc agtgcatcct acgaccggtc cctcagggtc
1980
tggagtatgg acaacatgat ctgcacgcag accctgctgc gtcaccaggg cagtgtcacc
2040
gcgctggctg tgtcccgggg ccgactcttc tcaggggctg tggatagcac tgtgaaggtt
2100
tggacttgct aacaggatcc aggccaggct gtggtttccc ctgaaccagc cctggacctt
2160
tctgagccag gctggccaca tggggtggtc tcggggtttc tgcctgcccc gtgggcatag
2220
gtggacaggc tctggcagcc gggcagtgcc ctccccgtcc catgctcggc gagcctccct
2280
ctactcggca ctgtccttgc tgcccagccc ctctctgggt gccaggtacg acgcttgccc
2340
cggcccaccc tccatcccca ccctccatcc ccaccctaga tggagcgagg gccttttttac
2400
tcacctttttc taccgttttt agactgtatg tagatttggt tacctcctgg ttgaaataaa
2460
tgctccacag actgtggctg tgagtgggga cagctcctcg ggacaagggg gctgtgtgtg
2520
gccttgaggt tggtgtgcac aggcactggc tgctgtgagt ggggggggcat ggggcagttt
2580
cctttggtgg accccaggac ttcggcccac tccggggcct cccctccctg ctaggaggca
2640
actcgtcaca cccaagctgc tggcctccag tcccatctcc cccaacacat gtgcccccaa
2700
aaagtgagcc aggcacctct gtttcctgct gtttattgac agccgacgga gcgccttgcc
2760
cagacctccc ctgcccacct gctggagccc agcctgtgcc gccctctgag gagaggcctg
2820
gggggacagc tgggcacgtc cactcgcagg gaaacacggg gtgagacagc aggaaggggc
2880
cctgcacgcc gggacgccac ctccgccagc cgcctccacc cgccccacac cacaatcgct
2940
ggttttcggc attttttaaa ttttttttttt aagaaacgtc aaagttgtgc ccaacactgt
3000

```
ggatcagcaa acacgataga ggagaccagt cagtacttct tggaggggggc aggaggagag
3060
aggaaaaggg agggcgagaa tgaccacaca acacagcctt ggaccatgag cagaagcgtc
3120
cgtgggaact ccactggggt ggatgggctg cctgcacagc ccctggagag ggggccaggc
3180
acaccctcag aggagctgca agcccgtggc ctggcctgct acatgccctg cttccacgtg
3240
gctgccacgc tgacacaccc acattcacca aacccacccg cgccctggga cgcagccacg
3300
ccaggaggag gacacggccg ccgagagcaa ggcacaacct cgagttcttg gggcgcagag
3360
aacttaggag agaagcacgg aggagccccc ggcagagcac ccgccccccgg gccccagcct
3420
tccacctgtg ctagcagcct ggggcctcca ctctggccgg aggaaggacc gcaggcagac
3480
agcctgggcc tctaacagct tttgtccgga gctagacttc gtgtcctttc agttggtaaa
3540
tggttttcta tagaatcaat aatatttctt tctttaaata tatatttgtt aaagttatac
3600
cttttttgttt ctctggggaa atccgcctca gctcattccc aataaattaa tactcttgaa
3660
a
3661


<210> 4360
<211> 670
<212> PRT
<213> Homo sapiens

<400> 4360
Met Ser Ser Gly Lys Ser Ala Arg Tyr Asn Arg Phe Ser Gly Gly Pro
1               5                   10                  15
Ser Asn Leu Pro Thr Pro Asp Val Thr Thr Gly Thr Arg Met Glu Thr
            20                  25                  30
Thr Phe Gly Pro Ala Phe Ser Ala Val Thr Thr Ile Thr Lys Ala Asp
        35                  40                  45
Gly Thr Ser Thr Tyr Lys Gln His Cys Arg Thr Pro Ser Ser Ser Ser
    50                  55                  60
Thr Leu Ala Tyr Ser Pro Arg Asp Glu Asp Ser Met Pro Pro Ile
65                  70                  75                  80
Ser Thr Pro Arg Arg Ser Asp Ser Ala Ile Ser Val Arg Ser Leu His
                85                  90                  95
Ser Glu Ser Ser Met Ser Leu Arg Ser Thr Phe Ser Leu Pro Glu Glu
            100                 105                 110
Glu Glu Glu Pro Glu Pro Leu Val Phe Ala Glu Gln Pro Ser Val Lys
        115                 120                 125
Leu Cys Cys Gln Leu Cys Cys Ser Val Phe Lys Asp Pro Val Ile Thr
    130                 135                 140
Thr Cys Gly His Thr Phe Cys Arg Arg Cys Ala Leu Lys Ser Glu Lys
145                 150                 155                 160
Cys Pro Val Asp Asn Val Lys Leu Thr Val Val Val Asn Asn Ile Ala
                165                 170                 175
Val Ala Glu Gln Ile Gly Glu Leu Phe Ile His Cys Arg His Gly Cys
```

```
                    180                    185                    190
Arg Val Ala Gly Ser Gly Lys Pro Pro Ile Phe Glu Val Asp Pro Arg
        195                    200                    205
Gly Cys Pro Phe Thr Ile Lys Leu Ser Ala Arg Lys Asp His Glu Gly
        210                    215                    220
Ser Cys Asp Tyr Arg Pro Val Arg Cys Pro Asn Asn Pro Ser Cys Pro
225                    230                    235                    240
Pro Leu Leu Arg Met Asn Leu Glu Ala His Leu Lys Glu Cys Glu His
                245                    250                    255
Ile Lys Cys Pro His Ser Lys Tyr Gly Cys Thr Phe Ile Gly Asn Gln
                260                    265                    270
Asp Thr Tyr Glu Thr His Leu Glu Thr Cys Arg Phe Glu Gly Leu Lys
        275                    280                    285
Glu Phe Leu Gln Gln Thr Asp Asp Arg Phe His Glu Met His Val Ala
    290                    295                    300
Leu Ala Gln Lys Asp Gln Glu Ile Ala Phe Leu Arg Ser Met Leu Gly
305                    310                    315                    320
Lys Leu Ser Glu Lys Ile Asp Gln Leu Glu Lys Ser Leu Glu Leu Lys
                325                    330                    335
Phe Asp Val Leu Asp Glu Asn Gln Ser Lys Leu Ser Glu Asp Leu Met
                340                    345                    350
Glu Phe Arg Arg Asp Ala Ser Met Leu Asn Asp Glu Leu Ser His Ile
        355                    360                    365
Asn Ala Arg Leu Asn Met Gly Ile Leu Gly Ser Tyr Asp Pro Gln Gln
    370                    375                    380
Ile Phe Lys Cys Lys Gly Thr Phe Val Gly His Gln Gly Pro Val Trp
385                    390                    395                    400
Cys Leu Cys Val Tyr Ser Met Gly Asp Leu Leu Phe Ser Gly Ser Ser
                405                    410                    415
Asp Lys Thr Ile Lys Val Trp Asp Thr Cys Thr Thr Tyr Lys Cys Gln
        420                    425                    430
Lys Thr Leu Glu Gly His Asp Gly Ile Val Leu Ala Leu Cys Ile Gln
        435                    440                    445
Gly Cys Lys Leu Tyr Ser Gly Ser Ala Asp Cys Thr Ile Ile Val Trp
    450                    455                    460
Asp Ile Gln Asn Leu Gln Lys Val Asn Thr Ile Arg Ala His Asp Asn
465                    470                    475                    480
Pro Val Cys Thr Leu Val Ser Ser His Asn Val Leu Phe Ser Gly Ser
            485                    490                    495
Leu Lys Ala Ile Lys Val Trp Asp Ile Val Gly Thr Glu Leu Lys Leu
            500                    505                    510
Lys Lys Glu Leu Thr Gly Leu Asn His Trp Val Arg Ala Leu Val Ala
        515                    520                    525
Ala Gln Ser Tyr Leu Tyr Ser Gly Ser Tyr Gln Thr Ile Lys Ile Trp
    530                    535                    540
Asp Ile Arg Thr Leu Asp Cys Ile His Val Leu Gln Thr Ser Gly Gly
545                    550                    555                    560
Ser Val Tyr Ser Ile Ala Val Thr Asn His His Ile Val Cys Gly Thr
            565                    570                    575
Tyr Glu Asn Leu Ile His Val Trp Asp Ile Glu Ser Lys Glu Gln Val
        580                    585                    590
Arg Thr Leu Thr Gly His Val Gly Thr Val Tyr Ala Leu Ala Val Ile
        595                    600                    605
Ser Thr Pro Asp Gln Thr Lys Val Phe Ser Ala Ser Tyr Asp Arg Ser
```

3555

```
      610                      615                      620
Leu Arg Val Trp Ser Met Asp Asn Met Ile Cys Thr Gln Thr Leu Leu
625                      630                      635                      640
Arg His Gln Gly Ser Val Thr Ala Leu Ala Val Ser Arg Gly Arg Leu
                        645                      650                      655
Phe Ser Gly Ala Val Asp Ser Thr Val Lys Val Trp Thr Cys
                    660                      665                      670
```

```
<210> 4361
<211> 574
<212> DNA
<213> Homo sapiens
```

```
<400> 4361
nggatccaga acccattgct atcaggctgt acagccttca atcacaacgg gaacctgctg
60
gtcacagggg cagctgatgg cgtcatccgg ctgtttgaca tgcagcagca tgagtgcgcg
120
atgagctgga gggcccacta cggggaggtc tactctgtgg agttcagcta tgatgagaac
180
accgtgtaca gcatcggcga ggacgggaag gtaggcggct ccaggattca gataagagag
240
caccgggatg acatgtgggc cggctgcagg ttgtggccat acctgttact agctctgcaa
300
cctggggcct cttttgcag ctttgttatc tgtagaatag gataaaacta gtaattcgtc
360
ttacaatcct tgcgaggttt tagtgaattc agtgggagtt ggctatcctt atgaaaggaa
420
gtaccaaaaa ttactcatct taccatagat gtatctgtgg ggtctggatt tagggctgag
480
tttgctttgc tgggcttggt agtgagtggt cccaggacca ctcatggatg tgtagtttgc
540
tgagtggctg gggacagctt cttacatgtg taca
574
```

```
<210> 4362
<211> 116
<212> PRT
<213> Homo sapiens
```

```
<400> 4362
Xaa Ile Gln Asn Pro Leu Leu Ser Gly Cys Thr Ala Phe Asn His Asn
1                   5                   10                      15
Gly Asn Leu Leu Val Thr Gly Ala Ala Asp Gly Val Ile Arg Leu Phe
            20                      25                      30
Asp Met Gln Gln His Glu Cys Ala Met Ser Trp Arg Ala His Tyr Gly
        35                      40                      45
Glu Val Tyr Ser Val Glu Phe Ser Tyr Asp Glu Asn Thr Val Tyr Ser
    50                      55                      60
Ile Gly Glu Asp Gly Lys Val Gly Gly Ser Arg Ile Gln Ile Arg Glu
65                      70                      75                      80
His Arg Asp Asp Met Trp Ala Gly Cys Arg Leu Trp Pro Tyr Leu Leu
                85                      90                      95
Leu Ala Leu Gln Pro Gly Ala Ser Phe Cys Ser Phe Val Ile Cys Arg
```

```
            100                    105                    110
Ile Gly Ile Asn
         115


<210> 4363
<211> 1222
<212> DNA
<213> Homo sapiens

<400> 4363
tttttttttt tttttttttt tttttttttt tttttttttt ttttttgagat ttcccaggac
60
tggctttaat ttgaaaaatc tgattggggt ctcttcccgt atcagagaag gaacagccca
120
agctatgacc ccagggccag ggaattcagt ccccaccaga ccctgtcatt ccatcactag
180
ggggtaattc caggctcccc ctgccagccc tgagacagga ggacggatgt gaagttgccc
240
aggactagat tctgtctctc caaagtggcc caagccctgt tctctgtact agggaagcca
300
gctgtgtctt ttcgaggaca gttggtccag ccagcaggct cagttcagat accagacaac
360
cattccagca cgagggctca gcgccctggc cccggcggtc gctccagtgc ctgtgtgccc
420
accagcacat ccatgaggta gtccaattcg gcctcgtcca gctccggagc ttcctccttg
480
cccggcccat cctcagggcc tggtttgagg ccctcagagg ctggtgccca aagttcattg
540
tcatacatag aggtgtcaat atcctcaaac aggccctcga gcccatcgtc cagtagacag
600
ccagtggctg ggcccagcag gtccaaggca cccaggctgg gcgctgctcc cccgatgcta
660
cggcctggtg gcccctcgtc tgccaagggt tggggagcct gactcaggcc ctcaatgtgg
720
ctgaggtcct ccaggaggct ggccatggag gctgaaaggg cagcgtccga gcttgccagt
780
aagttgtcag ccacactggg ggctgcaggt gggctaggca caggtggcag ggcagccgcg
840
ggtgccatgg acgccnntgg atgcgccgca gagtgttcac gaccagcacc aggtgccgca
900
ggtccggctc actctgctgc aggctgtggt nggagcttga gcactgagag gtcaaagagg
960
gagctagagg ccacggccgg gggtgcctgt gccaccgctg cgtggccagg atctagccac
1020
caggagtcga ctgccagagg ttccttctcc tcctcctcct cccgtttccg cttcagaccc
1080
ttgctcagca tcttgctcac tagcggccaa tcagaacgaa gaggtagcca cccacaacca
1140
atcaggaaac ggcggcggca gcatcgcttg ttggctgtcc tccggaaacc cgcgcctggg
1200
tcgcgagacg cagttctagc ga
1222

<210> 4364
```

<211> 75
<212> PRT
<213> Homo sapiens

<400> 4364
Asp Arg Arg Thr Asp Val Lys Leu Pro Arg Thr Arg Phe Cys Leu Ser
1   5   10   15
Lys Val Ala Gln Ala Leu Phe Ser Val Leu Gly Lys Pro Ala Val Ser
            20   25   30
Phe Arg Gly Gln Leu Val Gln Pro Ala Gly Ser Val Gln Ile Pro Asp
            35   40   45
Asn His Ser Ser Thr Arg Ala Gln Arg Pro Gly Pro Gly Gly Arg Ser
        50   55   60
Ser Ala Cys Val Pro Thr Ser Thr Ser Met Arg
65   70   75

<210> 4365
<211> 469
<212> DNA
<213> Homo sapiens

<400> 4365
gacgtgctcg atggcaaggt cgcaccgggc aagaacgtgc cggtctacga caccatctgc
60
gagttcaccg gcatgtcggt cgccgacttc ctcgctgaca agggcagcca ggttgagatc
120
gtcaccgacg acatcaagcc gggtgtggcg attggcggta cgtcgttccc gacctactac
180
cgcagcatgt acccgaaaga agtgatcatg accggcgaca tgatgctgga aaaggtctat
240
cgcgagggcg acaagctggt ggcggtgctg gagaacgaat acaccggcgc caaggaagag
300
cgggtggtcg accaggtggt ggtggagaac ggtgtgcgtc cggatgagga aatctactac
360
gggctcaagg aaggttcgcg caacaagggc cagatcgatg tcgaagccct gttcgcgatc
420
aagccgcagc cttcgctgaa tactcttaat gaagaggcag cgggtgacg
469

<210> 4366
<211> 156
<212> PRT
<213> Homo sapiens

<400> 4366
Asp Val Leu Asp Gly Lys Val Ala Pro Gly Lys Asn Val Pro Val Tyr
1   5   10   15
Asp Thr Ile Cys Glu Phe Thr Gly Met Ser Val Ala Asp Phe Leu Ala
            20   25   30
Asp Lys Gly Ser Gln Val Glu Ile Val Thr Asp Asp Ile Lys Pro Gly
            35   40   45
Val Ala Ile Gly Gly Thr Ser Phe Pro Thr Tyr Tyr Arg Ser Met Tyr
        50   55   60
Pro Lys Glu Val Ile Met Thr Gly Asp Met Met Leu Glu Lys Val Tyr

```
65                  70                  75                  80
Arg Glu Gly Asp Lys Leu Val Ala Val Leu Glu Asn Glu Tyr Thr Gly
                    85                  90                  95
Ala Lys Glu Glu Arg Val Val Asp Gln Val Val Val Glu Asn Gly Val
                    100                 105                 110
Arg Pro Asp Glu Glu Ile Tyr Tyr Gly Leu Lys Glu Gly Ser Arg Asn
            115                 120                 125
Lys Gly Gln Ile Asp Val Glu Ala Leu Phe Ala Ile Lys Pro Gln Pro
        130                 135                 140
Ser Leu Asn Thr Leu Asn Glu Glu Ala Ala Gly Asp
145                 150                 155
```

```
<210> 4367
<211> 852
<212> DNA
<213> Homo sapiens
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```
<400> 4367
nncctaggca gggggatggc cctgcgtgac tgcaccagaa ggaaggagct ggggccggct
60
ggccttttgc aggtggaatt ccagaggcc cggatcttcg aggagaccct gaacatcctc
120
atctacgaga ctccccgggg cccagaccca gccctcctgg aggccacagg gggagcagct
180
ggagctggtg gggctggccg cggggaggat gaagagaacc gagagcaccg tgtccgcagg
240
atccatgtcc ggcgccatat cacccacgac gagcgtcctc atggccaaca aattgtcttc
300
aaggactgac ctctgaccct cccctgcct tcctcttgcc ttgggaccca gtccctctct
360
ctttccctcc ccttcccaga cttttgcccc ggctctgctg gccaagtcgt gggtcctcct
420
ctgtcccttc attgcatggc acagctcact ttggcccttc tccacccgtc ccaaccccat
480
tgctaacaac atggtacatt ccggccccac cactcagagc cttccgaagc caacacttgt
540
ccccaccctg gccctgcgtc cttccctctc cagctggtta agagggattt agaattccct
600
ttctcttttt ttagtgcatc gtccatgcca aagtgtgcgg cccttcctga catcaccaca
660
gtctgagcag cctcccgcgt cctgcagggt agtccgcccc ctcctcccca ccatcctccc
720
tacctcctta actttgtact agactggcct gggcctgccc agctcagcgt tatcagtctg
780
tttcatatta tttattattt taattttcta ttaaattatt gaaataaagt taagttgaga
840
aactaaaaaa aa
852
```

```
<210> 4368
<211> 102
<212> PRT
<213> Homo sapiens
```

<400> 4368
Xaa Leu Gly Arg Gly Met Ala Leu Arg Asp Cys Thr Arg Arg Lys Glu
 1   5   10   15
Leu Gly Pro Ala Gly Leu Leu Gln Val Glu Phe Pro Glu Ala Arg Ile
            20   25   30
Phe Glu Glu Thr Leu Asn Ile Leu Ile Tyr Glu Thr Pro Arg Gly Pro
        35   40   45
Asp Pro Ala Leu Leu Glu Ala Thr Gly Gly Ala Ala Gly Ala Gly Gly
    50   55   60
Ala Gly Arg Gly Glu Asp Glu Glu Asn Arg Glu His Arg Val Arg Arg
65   70   75   80
Ile His Val Arg Arg His Ile Thr His Asp Glu Arg Pro His Gly Gln
                85   90   95
Gln Ile Val Phe Lys Asp
                100

<210> 4369
<211> 1264
<212> DNA
<213> Homo sapiens

<400> 4369
gctcagctgg ccaaccctga atcccccctg ggcagtgcag agcagttcct cctcaccctg
60
tcctccatca gcgagctctc tgcacgactt cacctctggg cattcaaaat ggattatgaa
120
actacagaaa aggaagtagc agaaccactc ctggacctga aggaaggaat agaccagttg
180
gagaacaata aaaccttggg ctttatcctg tctactctct tagccattgg gaactttcta
240
aatggaacta atgccaaagc gtttgagtta agctacctcg agaaggttcc agaagtcaaa
300
gacacagtgc acaagcagtc gcttctccac catgtgtgca ccatggtggt agaaaacttc
360
ccagacagct ccgatctgta ctcggagatc ggggccatca ccaggtcagc caaggttgac
420
tttgatcaac ttcaggataa tttatgtcag atggagagaa gatgcaaagc ttcatgggat
480
cacctcaagg caattgcaaa acatgaaatg aaaccagttt taaaacaacg gatgtcagag
540
ttcctgaaag actgtgcaga gcgaattata attttaaaga ttgtccatag aaggataatc
600
aacagattcc actccttttt actctttatg ggccatccac cttatgcaat tcgggaagtg
660
aacataaaca aattctgcag gattattagt gaatttgcac tagagtatcg cacaaccagg
720
gaaagggttt tgcagcagaa acagaaacgg ccaaccaca gagagagaaa taagaccaga
780
gggaagatga tcaccgattc tggcaagttc tccggcagtt ctccggcgcc cccaagccag
840
ccgcagggtc tgagctatgc ggaggacgcg gctgagcacg agaacatgaa ggctgtgctg
900
aaaacctcgt ccccctccag gagtcccctg cacatacctt ctccatcgtg tcagctgtgt
960

ttctcttgat tccgtgacac ccggtttatt agttcaaaag tgtgacacct tttctgggca
1020
aggaacagcc cctttaagga gcaaatcact tctgtcacag ttattatggt aatatgaggc
1080
aatctgatta gcttcacaga ctgagtctcc acaacaccaa aatatccaga tgtaaacccc
1140
aaacttgtac acaaaagaaa gcacagattg tttacctgtt gtggatttta gatgtaacaa
1200
atgtttatac aaatacatac atgtacacca tgtttcaaat actaaataaa tagagtttaa
1260
tgcc
1264

<210> 4370
<211> 322
<212> PRT
<213> Homo sapiens

<400> 4370
Ala Gln Leu Ala Asn Pro Glu Ile Pro Leu Gly Ser Ala Glu Gln Phe
1   5   10   15
Leu Leu Thr Leu Ser Ser Ile Ser Glu Leu Ser Ala Arg Leu His Leu
            20   25   30
Trp Ala Phe Lys Met Asp Tyr Glu Thr Thr Glu Lys Glu Val Ala Glu
        35   40   45
Pro Leu Leu Asp Leu Lys Glu Gly Ile Asp Gln Leu Glu Asn Asn Lys
    50   55   60
Thr Leu Gly Phe Ile Leu Ser Thr Leu Leu Ala Ile Gly Asn Phe Leu
65   70   75   80
Asn Gly Thr Asn Ala Lys Ala Phe Glu Leu Ser Tyr Leu Glu Lys Val
            85   90   95
Pro Glu Val Lys Asp Thr Val His Lys Gln Ser Leu Leu His His Val
            100   105   110
Cys Thr Met Val Val Glu Asn Phe Pro Asp Ser Ser Asp Leu Tyr Ser
        115   120   125
Glu Ile Gly Ala Ile Thr Arg Ser Ala Lys Val Asp Phe Asp Gln Leu
    130   135   140
Gln Asp Asn Leu Cys Gln Met Glu Arg Arg Cys Lys Ala Ser Trp Asp
145   150   155   160
His Leu Lys Ala Ile Ala Lys His Glu Met Lys Pro Val Leu Lys Gln
                165   170   175
Arg Met Ser Glu Phe Leu Lys Asp Cys Ala Glu Arg Ile Ile Ile Leu
            180   185   190
Lys Ile Val His Arg Arg Ile Ile Asn Arg Phe His Ser Phe Leu Leu
        195   200   205
Phe Met Gly His Pro Pro Tyr Ala Ile Arg Glu Val Asn Ile Asn Lys
    210   215   220
Phe Cys Arg Ile Ile Ser Glu Phe Ala Leu Glu Tyr Arg Thr Thr Arg
225   230   235   240
Glu Arg Val Leu Gln Gln Lys Gln Lys Arg Ala Asn His Arg Glu Arg
                245   250   255
Asn Lys Thr Arg Gly Lys Met Ile Thr Asp Ser Gly Lys Phe Ser Gly
            260   265   270
Ser Ser Pro Ala Pro Pro Ser Gln Pro Gln Gly Leu Ser Tyr Ala Glu

```
            275                 280                 285
Asp Ala Ala Glu His Glu Asn Met Lys Ala Val Leu Lys Thr Ser Ser
        290                 295                 300
Pro Ser Arg Ser Pro Leu His Ile Pro Ser Pro Ser Cys Gln Leu Cys
305                 310                 315                 320
Phe Ser
```

```
<210> 4371
<211> 907
<212> DNA
<213> Homo sapiens

<400> 4371
actttcaaaa tggcggagtg tggagcgagc ggcagcggga gcagcgggga cagtctggac
60
aagagcatca cgctgccccc cgacgagatc ttccgcaacc tggagaacgc caagcgcttc
120
gccatcgaca taggcgggtc gttaaccaag ctggcctact attcaacggt acagcacaaa
180
gtcgccaagg tgcggtcttt cgaccactcc ggaaaggaca cagaacgtga acatgagccg
240
ccctatgaga tttcagttca agaagagatc actgctcgac tgcacttcat taagtttgag
300
aatacctaca tcgaagcctg cctggacttc atcaaagacc atctcgtcaa cacagagacc
360
aaggtcatcc aggcgaccgg gggcggggcc tacaagttca aggacctcat cgaagagaag
420
ctgcggctga aagtcgacaa ggaggacgtg atgacgtgcc tgattaaggg gtgcaacttc
480
gtgctcaaga acatccccca tgaggccttc gtgtaccaga aggattccga ccctgagttc
540
cggttccaga ccaaccaccc ccacattttc ccctatcttc ttgtcaatat cggctctgga
600
gtctccatcg tgaaggtgga cacggaggac aggttcgagt gggtcggcgg cagctccatt
660
ggaggcggca ccttctgggg gcttggcgct ctgctcacca aaacgaagaa gtttgacgag
720
ctcctgcacc tggcctcgag gggccagcac agcaatgtgg acatgctggt gcgggacgtc
780
tacggcggcg cccaccagac tctcgggctg agcgggaacc tcatcgccag cagcttcggg
840
aagtcggcca ccgccgacca agagttctcc aaagaagaca tggcgaagag cctgctgcac
900
atgatca
907
```

```
<210> 4372
<211> 302
<212> PRT
<213> Homo sapiens

<400> 4372
Thr Phe Lys Met Ala Glu Cys Gly Ala Ser Gly Ser Gly Ser Ser Gly
```

```
1                    5                    10                   15
Asp Ser Leu Asp Lys Ser Ile Thr Leu Pro Pro Asp Glu Ile Phe Arg
            20                  25                  30
Asn Leu Glu Asn Ala Lys Arg Phe Ala Ile Asp Ile Gly Gly Ser Leu
            35                  40                  45
Thr Lys Leu Ala Tyr Tyr Ser Thr Val Gln His Lys Val Ala Lys Val
            50                  55                  60
Arg Ser Phe Asp His Ser Gly Lys Asp Thr Glu Arg Glu His Glu Pro
65                  70                  75                  80
Pro Tyr Glu Ile Ser Val Gln Glu Glu Ile Thr Ala Arg Leu His Phe
                85                  90                  95
Ile Lys Phe Glu Asn Thr Tyr Ile Glu Ala Cys Leu Asp Phe Ile Lys
            100                 105                 110
Asp His Leu Val Asn Thr Glu Thr Lys Val Ile Gln Ala Thr Gly Gly
        115                 120                 125
Gly Ala Tyr Lys Phe Lys Asp Leu Ile Glu Glu Lys Leu Arg Leu Lys
        130                 135                 140
Val Asp Lys Glu Asp Val Met Thr Cys Leu Ile Lys Gly Cys Asn Phe
145                 150                 155                 160
Val Leu Lys Asn Ile Pro His Glu Ala Phe Val Tyr Gln Lys Asp Ser
                165                 170                 175
Asp Pro Glu Phe Arg Phe Gln Thr Asn His Pro His Ile Phe Pro Tyr
            180                 185                 190
Leu Leu Val Asn Ile Gly Ser Gly Val Ser Ile Val Lys Val Glu Thr
        195                 200                 205
Glu Asp Arg Phe Glu Trp Val Gly Gly Ser Ser Ile Gly Gly Gly Thr
        210                 215                 220
Phe Trp Gly Leu Gly Ala Leu Leu Thr Lys Thr Lys Lys Phe Asp Glu
225                 230                 235                 240
Leu Leu His Leu Ala Ser Arg Gly Gln His Ser Asn Val Asp Met Leu
                245                 250                 255
Val Arg Asp Val Tyr Gly Gly Ala His Gln Thr Leu Gly Leu Ser Gly
        260                 265                 270
Asn Leu Ile Ala Ser Ser Phe Gly Lys Ser Ala Thr Ala Asp Gln Glu
        275                 280                 285
Phe Ser Lys Glu Asp Met Ala Lys Ser Leu Leu His Met Ile
        290                 295                 300
```

<210> 4373
<211> 1017
<212> DNA
<213> Homo sapiens

<400> 4373
acgcgtcatc acggctgcgc cgggggaatc cgtgcgggcg ccttccgtcc cggtcccatc
60
ctcgccgcgc tccagcacct ctgaagtttt gcagcgccca gaaaggaggc gaggaaggag
120
ggagtgtgtg agaggaggga gcaaaaagct caccctaaaa catttatttc aaggagaaaa
180
gaaaaagggg gggcgcaaaa atggctgggg caattataga aaacatgagc accaagaagc
240
tgtgcattgt tggtgggatt ctgctcgtgt tccaaatcat cgcctttctg gtgggaggct
300

3563
```

tgattgctcc agggcccaca acggcagtgt cctacatgtc ggtgaaatgt gtggatgccc
360
gtaagaacca tcacaagaca aaatggttcg tgccttgggg acccaatcat tgtgacaaga
420
tccgagacat tgaagaggca attccaaggg aaattgaagc caatgacatc gtgtttctg
480
ttcacattcc cctcccccac atggagatga gtccttggtt ccaattcatg ctgtttatcc
540
tgcagctgga cattgccttc aagctaaaca accaaatcag agaaaatgca gaagtctcca
600
tggacgtttc cctggcttac cgtgatgacg cgtttgctga gtggactgaa atggcccatg
660
aaagagtacc acggaaactc aaatgcacct tcacatctcc caagactcca gagcatgagg
720
gccgttacta tgaatgtgat gtccttcctt tcatggaaat tgggtctgtg cccataagt
780
tttacctttt aaacatccgg ctgcctgtga atgagaagaa gaaaatcaat gtgggaattg
840
gggagataaa ggatatccgg ttggtgggga tccaccaaaa tggaggcttc accaaggtgt
900
ggtttgccat gaagaccttc cttacgccca gcatcttcat cattatggtg tggtattgga
960
ggaggatcac catgatgtcc cgacccccag tgcttctgga aaaagtcatc tttgccc
1017

<210> 4374
<211> 272
<212> PRT
<213> Homo sapiens

<400> 4374
Met Ala Gly Ala Ile Ile Glu Asn Met Ser Thr Lys Lys Leu Cys Ile
1               5                   10                  15
Val Gly Gly Ile Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly
            20                  25                  30
Gly Leu Ile Ala Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val
        35                  40                  45
Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
    50                  55                  60
Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala
65                  70                  75                  80
Ile Pro Arg Glu Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile
                85                  90                  95
Pro Leu Pro His Met Glu Met Ser Pro Trp Phe Gln Phe Met Leu Phe
            100                 105                 110
Ile Leu Gln Leu Asp Ile Ala Phe Lys Leu Asn Asn Gln Ile Arg Glu
        115                 120                 125
Asn Ala Glu Val Ser Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala
    130                 135                 140
Phe Ala Glu Trp Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu
145                 150                 155                 160
Lys Cys Thr Phe Thr Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr
                165                 170                 175
Tyr Glu Cys Asp Val Leu Pro Phe Met Glu Ile Gly Ser Val Ala His

```
            180                 185                  190
Lys Phe Tyr Leu Leu Asn Ile Arg Leu Pro Val Asn Glu Lys Lys Lys
        195                 200                 205
Ile Asn Val Gly Ile Gly Glu Ile Lys Asp Ile Arg Leu Val Gly Ile
    210                 215                 220
His Gln Asn Gly Gly Phe Thr Lys Val Trp Phe Ala Met Lys Thr Phe
225                 230                 235                 240
Leu Thr Pro Ser Ile Phe Ile Ile Met Val Trp Tyr Trp Arg Arg Ile
            245                 250                 255
Thr Met Met Ser Arg Pro Pro Val Leu Leu Glu Lys Val Ile Phe Ala
        260                 265                 270
```

<210> 4375
<211> 1966
<212> DNA
<213> Homo sapiens

<400> 4375

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aaggtgcctg cattgtatac caccacgtcg ggcaggtgct cctggaggga tttcttgatg
60
ttcctctcca ccttatccag gtactcatca tcctctgtgc cccactccag ctccaccttc
120
cgcctgacgg ccagctttgg gagggccggc cccgggatgc tacacacaac ccagctgtac
180
cagcatgtgc cagagacacg ctggccaatc gtgtactcgc cgcgctacaa catcaccttc
240
atgggcctgg agaagctgca tccctttgat gccggaaaat ggggcaaagt gatcaatttc
300
ctaaaagaag agaagcttct gtctgacagc atgctggtgg aggcgcggga ggcctcggag
360
gaggacctgc tggtggtgca cacgaggcgc tatcttaatg agctcaagtg gtcctttgct
420
gttgctacca tcacagaaat ccccccccgtt atcttcctcc ccaacttcct tgtgcagagg
480
aaggtgctga ggccccttcg gacccagaca ggaggaacca taatggcggg gaagctggct
540
gtggagcgag ctgggccat caacgtgggg ggtggcttcc accactgctc cagcgaccgt
600
ggcggggggct tctgtgccta tgcggacatc acgctcgcca tcaagtttct gtttgagcgt
660
gtggagggca tctccagggc taccatcatt gatcttgatg cccatcaggg caatgggcat
720
gagcgagact tcatggacga caagtgtgtg acatgcatgg atgtctacaa ccgccacatc
780
tacccagggg accgctttgc caagcaggcc atcaggcgga aggtggagct ggagtggggc
840
acagaggatg atgagtacct ggataaggtg agaggaaca tcaagaaatc cctccaggag
900
cacctgcccg acgtggtggt atacaatgca ggcaccgaca tcctcgaggg ggaccgcctt
960
gggggggctgt ccatcagccc agcgggcatc gtgaagcggg atgagctggt gttccggatg
1020
gtccgtggcc gccgggtgcc catccttatg gtgacctcag gcgggtacca gaagcgcaca
1080
```

3565

```
gcccgcatca ttgctgactc catacttaat ctgtttggcc tggggctcat tgggcctgag
1140
tcacccagcg tctccgcaca gaactcagac acaccgctgc ttccccctgc agtgccctga
1200
cccttgctgc cctgcctgtc acgtggccct gcctatccgc cccttagtgc tttttgtttt
1260
ctaacctcat ggggtggtgg aggcagcctt cagtgagcat ggaggggcag ggccatccct
1320
ggctggggcc tggagctggc ccttcctcta cttttccctg ctggaagcca gaagggcttg
1380
aggcctctat gggtgggggc agaaagcaga gcctgtgtcc caggggaccc acacgaagtc
1440
accagcccat aggtccaggg aggcaggcag ttaactgaga attggagagg acaggctagg
1500
tcccaggcac agcgagggcc ctgggcttgg ggtgttctgg ttttgagaac ggcagaccca
1560
ggtcggagtg aggaagcttc cacctccatc ctgactaggc ctgcatccta actgggcctc
1620
cctccctccc cttggtcatg ggatttgctg ccctctttgc cccagagctg aagagctata
1680
ggcactggtg tggatggccc aggaggtgct ggagctaggt ctccaggtgg gcctggttcc
1740
caggcagcag gtgggaaccc tgggcctgga tgtgaggggc ggtcaggaag gggtacaggt
1800
gggttccctc atctggagtt ccccctcaat aaagcaaggt ctggacctgc cttcccaggc
1860
ccttctgtgg gggtgaaggt ggggaaggcc tgcggcgccc agatcactgc cttagcagta
1920
gtcttgcctg ttcagtgcaa ggggcaggtt ttgggggggag gaattc
1966
```

```
<210> 4376
<211> 399
<212> PRT
<213> Homo sapiens
```

```
<400> 4376
Lys Val Pro Ala Leu Tyr Thr Thr Thr Ser Gly Arg Cys Ser Trp Arg
1               5                   10                  15
Asp Phe Leu Met Phe Leu Ser Thr Leu Ser Arg Tyr Ser Ser Ser Ser
                20                  25                  30
Val Pro His Ser Ser Ser Thr Phe Arg Leu Thr Ala Ser Phe Gly Arg
            35                  40                  45
Ala Gly Pro Gly Met Leu His Thr Thr Gln Leu Tyr Gln His Val Pro
        50                  55                  60
Glu Thr Arg Trp Pro Ile Val Tyr Ser Pro Arg Tyr Asn Ile Thr Phe
65                  70                  75                  80
Met Gly Leu Glu Lys Leu His Pro Phe Asp Ala Gly Lys Trp Gly Lys
                85                  90                  95
Val Ile Asn Phe Leu Lys Glu Glu Lys Leu Leu Ser Asp Ser Met Leu
                100                 105                 110
Val Glu Ala Arg Glu Ala Ser Glu Glu Asp Leu Leu Val Val His Thr
            115                 120                 125
Arg Arg Tyr Leu Asn Glu Leu Lys Trp Ser Phe Ala Val Ala Thr Ile
```

```
       130                       135                    140
Thr Glu Ile Pro Pro Val Ile Phe Leu Pro Asn Phe Leu Val Gln Arg
145                  150                    155                    160
Lys Val Leu Arg Pro Leu Arg Thr Gln Thr Gly Gly Thr Ile Met Ala
                165                    170                    175
Gly Lys Leu Ala Val Glu Arg Gly Trp Ala Ile Asn Val Gly Gly Gly
            180                    185                    190
Phe His His Cys Ser Ser Asp Arg Gly Gly Gly Phe Cys Ala Tyr Ala
        195                    200                    205
Asp Ile Thr Leu Ala Ile Lys Phe Leu Phe Glu Arg Val Glu Gly Ile
    210                    215                    220
Ser Arg Ala Thr Ile Ile Asp Leu Asp Ala His Gln Gly Asn Gly His
225                    230                    235                    240
Glu Arg Asp Phe Met Asp Asp Lys Cys Val Thr Cys Met Asp Val Tyr
                245                    250                    255
Asn Arg His Ile Tyr Pro Gly Asp Arg Phe Ala Lys Gln Ala Ile Arg
                260                    265                    270
Arg Lys Val Glu Leu Glu Trp Gly Thr Glu Asp Asp Glu Tyr Leu Asp
            275                    280                    285
Lys Val Glu Arg Asn Ile Lys Lys Ser Leu Gln Glu His Leu Pro Asp
        290                    295                    300
Val Val Val Tyr Asn Ala Gly Thr Asp Ile Leu Glu Gly Asp Arg Leu
305                    310                    315                    320
Gly Gly Leu Ser Ile Ser Pro Ala Gly Ile Val Lys Arg Asp Glu Leu
                325                    330                    335
Val Phe Arg Met Val Arg Gly Arg Arg Val Pro Ile Leu Met Val Thr
            340                    345                    350
Ser Gly Gly Tyr Gln Lys Arg Thr Ala Arg Ile Ile Ala Asp Ser Ile
            355                    360                    365
Leu Asn Leu Phe Gly Leu Gly Leu Ile Gly Pro Glu Ser Pro Ser Val
    370                    375                    380
Ser Ala Gln Asn Ser Asp Thr Pro Leu Leu Pro Pro Ala Val Pro
385                    390                    395
```

```
<210> 4377
<211> 812
<212> DNA
<213> Homo sapiens

<400> 4377
ntcctgggga ggcggtgccc cccatggcga ggccggcgag agcagggcct gcttcccccc
60
gaggacagcc gcctgtggca gtatcttctg agccgctcca tgcgggagca cccggcgctg
120
cgaagcctga ggctgctgac cctggagcag ccgcaggggg attctatgat gacctgcgag
180
caggcccagc tcttggccaa cctggcgcgg ctcatccagg ccaagaaggc gctggacctg
240
ggcaccttca cgggctactc cgccctggcc ctggccctgg cgctgcccgc ggacgggcgc
300
gtggtgacct cgaggtgga cgcgcagccc ccggagctgg acggcccct gtggaggcag
360
gccgaggcgg agcacaagat tcgactccgg ctgaagcccg ccttggagac cctggacgag
420
```

```
ctgctggcgg cgggcgaggc cggcaccttc gacgtggccg tggtggatgc ggacaaggag
480
aactgctccg cctactacga gcgctgcctg cagctgctgc gacccggagg catcctcgcc
540
gtcctcagag tcctgtggcg cgggaaggtg ctgcaacctc cgaaagggga cgtggcggcc
600
gagtgtgtgc gaaacctaaa cgaacgcatc cggcgggacg tcagggtcta catcagcctc
660
ctgcccctgg gcgatggact caccttggcc ttcaagatct agggctggcc cctagtgagt
720
gggctcgagg gagggttgcc tgggaacccc aggaattgac cctgagtttt aaattcgaaa
780
ataaagtggg gctgggacac acgaaaaaaa aa
812
```

```
<210> 4378
<211> 233
<212> PRT
<213> Homo sapiens
```

```
<400> 4378
Xaa Leu Gly Arg Arg Cys Pro Pro Trp Arg Gly Arg Arg Glu Gln Gly
 1               5                  10                  15
Leu Leu Pro Pro Glu Asp Ser Arg Leu Trp Gln Tyr Leu Leu Ser Arg
            20                  25                  30
Ser Met Arg Glu His Pro Ala Leu Arg Ser Leu Arg Leu Leu Thr Leu
        35                  40                  45
Glu Gln Pro Gln Gly Asp Ser Met Met Thr Cys Glu Gln Ala Gln Leu
    50                  55                  60
Leu Ala Asn Leu Ala Arg Leu Ile Gln Ala Lys Lys Ala Leu Asp Leu
65                  70                  75                  80
Gly Thr Phe Thr Gly Tyr Ser Ala Leu Ala Leu Ala Leu Ala Leu Pro
                85                  90                  95
Ala Asp Gly Arg Val Val Thr Cys Glu Val Asp Ala Gln Pro Pro Glu
            100                 105                 110
Leu Gly Arg Pro Leu Trp Arg Gln Ala Glu Ala Glu His Lys Ile Arg
        115                 120                 125
Leu Arg Leu Lys Pro Ala Leu Glu Thr Leu Asp Glu Leu Leu Ala Ala
    130                 135                 140
Gly Glu Ala Gly Thr Phe Asp Val Ala Val Val Asp Ala Asp Lys Glu
145                 150                 155                 160
Asn Cys Ser Ala Tyr Tyr Glu Arg Cys Leu Gln Leu Leu Arg Pro Gly
                165                 170                 175
Gly Ile Leu Ala Val Leu Arg Val Leu Trp Arg Gly Lys Val Leu Gln
            180                 185                 190
Pro Pro Lys Gly Asp Val Ala Ala Glu Cys Val Arg Asn Leu Asn Glu
        195                 200                 205
Arg Ile Arg Arg Asp Val Arg Val Tyr Ile Ser Leu Leu Pro Leu Gly
    210                 215                 220
Asp Gly Leu Thr Leu Ala Phe Lys Ile
225                 230
```

```
<210> 4379
<211> 2347
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<212> DNA
<213> Homo sapiens

<400> 4379
ngaggaccaa gccatgcgtg cctttgagct aatgaggagc aacgcggccc tgttccagct
60
gggctcggcc ccgcggtgtg ctggattgtg tgcacgactc tgaagctgca gatggagaag
120
ggggaggacc cggtccccac ctgcctcacc cgcacggggc tgttcctgcg tttcctctgc
180
agccggttcc cgcggggcgc acagctgcgg ggcgcgctgc ggacgctgag cctcctggcc
240
gcgcagggcc tgtgggcgca gacgtccgtg cttcaccgag aggatctgga aaggctcggg
300
gtgcaggagt ccgacctccg tctgttcctg gacggagaca tcctccgcca ggacagagtc
360
tccaaaggct gctactcctt catccacctc agcttccagc agtttctcac tgccctgttc
420
tacaccctgg agaaggagga ggaagaggat agggacggcc acctgggga cattggggac
480
gtacagaagc tgctttccgg agtagaaaga ctcaggaacc ccgacctgat ccaagcaggc
540
tactactcct ttggcctcgc taacgagaag agagccaagg agttggaggc cacttttggc
600
tgccggatgt caccggacat caaacaggaa ttgctgcgat cgacataag ttgtaagggt
660
ggacattcaa cggtgacaga cctgcaggag ctgctcggct gtctgtacga gtctcaggag
720
gaggagctgg tgaaggaggt gatggctcag ttcaaagaaa tatccctgca cttaaatgca
780
gtagacgttg tgccatcttc attctgcgtc aagcactgtc gaaacctgca gaaaatgtca
840
ctgcaggtaa taaaggagaa tctcccggag aatgtcactg cgtctgaatc agacgccgag
900
gttgagagat cccaggatga tcagcacatg cttcctttct ggacggacct ttgttccata
960
tttggatcaa ataaggatct gatgggtcta gcaatcaatg atagctttct cagtgcctcc
1020
ctagtaagga tcctgtgtga acaaatagcc tctgacacct gtcatctcca gagagtggtg
1080
ttcaaaaaca tttccccagc tgatgctcat cggaacctcn tgcctnnagc tcttcgaggt
1140
cacaagactg taacgtatct gacccttcaa ggcaatgacc aggatgatat gtttcccgca
1200
ttgtgtgagg tcttgagaca tccagaatgt aacctgcgat atctcgggtt ggtgtcttgt
1260
tccgctacca ctcagcagtg ggctgatctc tccttggccc ttgaagtcaa ccagtccctg
1320
acgtgcgtaa acctctccga caatgagctt ctggatgagg gtgctaagtt gctgtacaca
1380
actttgagac accccaagtg ctttctgcag aggttgtcgt tggaaaactg tcaccttaca
1440
gaagccaatt gcaaggacct tgctgctgtg ttggttgtca gccgggagct gacacacctg
1500

tgcttggcca agaaccccat tgggaataca ggggtgaagt ttctgtgtga gggcttgagg
1560
tacccccgagt gtaaactgca gaccttggtg ctttggaact gcgacataac tagcgatggc
1620
tgctgcgatc tcacaaagct tctccaagaa aaatcaagcc tgttgtgttt ggatctgggg
1680
ctgaatcaca taggagttaa gggaatgaag ttcctgtgtg aggctttgag gaaaccactg
1740
tgcaacttga gatgtctgtg gttgtgggga tgttccatcc ctccgttcag ttgtgaagac
1800
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1860
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1920
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1980
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2040
aggccttctt ctcatgactt catgatctga atccccccga gtcattcatt ctccatgaag
2100
tcatcgattt tccaggtgtg ggtgaactgc ctgtgactcc tctcctcccc cgcccctacc
2160
cctcagggat aatgagttca ttgctgggct agatgtttta gccatgattc tgcctctgtt
2220
ttatacctgc acacatcctt atctttgtta catatgaaat atctgtatca cgggtatatt
2280
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2340
aaaaaaa
2347

<210> 4380
<211> 652
<212> PRT
<213> Homo sapiens

<400> 4380
Met Glu Lys Gly Glu Asp Pro Val Pro Thr Cys Leu Thr Arg Thr Gly
1   5   10   15
Leu Phe Leu Arg Phe Leu Cys Ser Arg Phe Pro Arg Gly Ala Gln Leu
            20   25   30
Arg Gly Ala Leu Arg Thr Leu Ser Leu Leu Ala Ala Gln Gly Leu Trp
        35   40   45
Ala Gln Thr Ser Val Leu His Arg Glu Asp Leu Glu Arg Leu Gly Val
    50   55   60
Gln Glu Ser Asp Leu Arg Leu Phe Leu Asp Gly Asp Ile Leu Arg Gln
65   70   75   80
Asp Arg Val Ser Lys Gly Cys Tyr Ser Phe Ile His Leu Ser Phe Gln
                85   90   95
Gln Phe Leu Thr Ala Leu Phe Tyr Thr Leu Glu Lys Glu Glu Glu Glu
            100   105   110
Asp Arg Asp Gly His Thr Trp Asp Ile Gly Asp Val Gln Lys Leu Leu
            115   120   125
Ser Gly Val Glu Arg Leu Arg Asn Pro Asp Leu Ile Gln Ala Gly Tyr

```
          130                      135                      140
Tyr Ser Phe Gly Leu Ala Asn Glu Lys Arg Ala Lys Glu Leu Glu Ala
145                      150                      155                      160
Thr Phe Gly Cys Arg Met Ser Pro Asp Ile Lys Gln Glu Leu Leu Arg
                    165                      170                      175
Cys Asp Ile Ser Cys Lys Gly Gly His Ser Thr Val Thr Asp Leu Gln
                    180                      185                      190
Glu Leu Leu Gly Cys Leu Tyr Glu Ser Gln Glu Glu Glu Leu Val Lys
           195                      200                      205
Glu Val Met Ala Gln Phe Lys Glu Ile Ser Leu His Leu Asn Ala Val
           210                      215                      220
Asp Val Val Pro Ser Ser Phe Cys Val Lys His Cys Arg Asn Leu Gln
225                      230                      235                      240
Lys Met Ser Leu Gln Val Ile Lys Glu Asn Leu Pro Glu Asn Val Thr
                    245                      250                      255
Ala Ser Glu Ser Asp Ala Glu Val Glu Arg Ser Gln Asp Asp Gln His
                    260                      265                      270
Met Leu Pro Phe Trp Thr Asp Leu Cys Ser Ile Phe Gly Ser Asn Lys
                    275                      280                      285
Asp Leu Met Gly Leu Ala Ile Asn Asp Ser Phe Leu Ser Ala Ser Leu
           290                      295                      300
Val Arg Ile Leu Cys Glu Gln Ile Ala Ser Asp Thr Cys His Leu Gln
305                      310                      315                      320
Arg Val Val Phe Lys Asn Ile Ser Pro Ala Asp Ala His Arg Asn Leu
                    325                      330                      335
Xaa Pro Xaa Ala Leu Arg Gly His Lys Thr Val Thr Tyr Leu Thr Leu
           340                      345                      350
Gln Gly Asn Asp Gln Asp Asp Met Phe Pro Ala Leu Cys Glu Val Leu
           355                      360                      365
Arg His Pro Glu Cys Asn Leu Arg Tyr Leu Gly Leu Val Ser Cys Ser
           370                      375                      380
Ala Thr Thr Gln Gln Trp Ala Asp Leu Ser Leu Ala Leu Glu Val Asn
385                      390                      395                      400
Gln Ser Leu Thr Cys Val Asn Leu Ser Asp Asn Glu Leu Leu Asp Glu
                    405                      410                      415
Gly Ala Lys Leu Leu Tyr Thr Thr Leu Arg His Pro Lys Cys Phe Leu
                    420                      425                      430
Gln Arg Leu Ser Leu Glu Asn Cys His Leu Thr Glu Ala Asn Cys Lys
           435                      440                      445
Asp Leu Ala Ala Val Leu Val Val Ser Arg Glu Leu Thr His Leu Cys
           450                      455                      460
Leu Ala Lys Asn Pro Ile Gly Asn Thr Gly Val Lys Phe Leu Cys Glu
465                      470                      475                      480
Gly Leu Arg Tyr Pro Glu Cys Lys Leu Gln Thr Leu Val Leu Trp Asn
                    485                      490                      495
Cys Asp Ile Thr Ser Asp Gly Cys Cys Asp Leu Thr Lys Leu Leu Gln
                    500                      505                      510
Glu Lys Ser Ser Leu Leu Cys Leu Asp Leu Gly Leu Asn His Ile Gly
           515                      520                      525
Val Lys Gly Met Lys Phe Leu Cys Glu Ala Leu Arg Lys Pro Leu Cys
           530                      535                      540
Asn Leu Arg Cys Leu Trp Leu Trp Gly Cys Ser Ile Pro Pro Phe Ser
545                      550                      555                      560
Cys Glu Asp Val Cys Ser Ala Leu Ser Cys Asn Gln Ser Leu Val Thr
```

```
                       565                    570                      575
Leu Asp Leu Gly Gln Asn Pro Leu Gly Ser Ser Gly Val Lys Met Leu
            580                    585                      590
Phe Glu Thr Leu Thr Cys Ser Ser Gly Thr Leu Arg Thr Leu Arg Leu
        595                    600                      605
Lys Ile Asp Asp Phe Asn Asp Glu Leu Asn Lys Leu Leu Glu Glu Ile
    610                    615                      620
Glu Glu Lys Asn Pro Gln Leu Ile Ile Asp Thr Glu Lys His His Pro
625                    630                      635                    640
Trp Glu Glu Arg Pro Ser Ser His Asp Phe Met Ile
            645                    650
```

<210> 4381
<211> 1638
<212> DNA
<213> Homo sapiens

<400> 4381

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cgtgtctccg ctcgacaggg tgcttgggca gagcccatcg ggtaggcgcg ggccatggcg
120
cagtacaagg gcaccatgcg cgaggcaggc cgtgccatgc acctcctcaa gaagcgcgaa
180
aggcagcggg agcagatgga ggtgctgaag cagcgcatcg ccgaggagac catcctcaag
240
tcgcaggtgg acaagaggtt ctcggcgcat tacgacgccg tggaggccga gctgaagtcc
300
agcgcggtgg gcctggtgac cctgaacgac atgaaggccc ggcaggaggc cctggtcagg
360
gagcgcgagc ggcagctggc caagcgccag cacctggagg agcagcggct gcagcaggag
420
cggcagcggg agcaggagca gcggcgcgag cgcaagcgta agatctcctg cctgtccttt
480
gcactagacg acctcgatga ccaggccgac gcggccgagg ccaggcgcgc cggaaacctg
540
ggcaagaacc ccgacgtgga caccagcttc ctgccagacc gcgaccgcga ggaggaggag
600
aaccggctcc gagaggagct gcgccaagag tgggaggcgc agcgcgagaa agtgaaggac
660
gaggagatgg aggtcacctt cagctactgg gacggctcgg ccaccggcg cacggtgcgg
720
gtgcgcaagg gcaacacggt gcagcagttc ctgaagaagg cgctgcaggg gctgcgcaag
780
gacttcctgg agctgcgctc cgccggcgtg gagcagctca tgttcatcaa ggaggacctc
840
atcctgccgc actaccacac cttctacgac ttcatcatcg ccagggcgag gggcaagagc
900
gggccgctct tcagcttcga tgtgcacgat gacgtgcgcc tgctcagcga cgccaccatg
960
gagaaggacg agtcgcacgc gggcaaggtg gtgctgcgca gctggtacga gaagaacaag
1020
cacatcttcc ccgccagccg ctgggaggcc tatgaccccg agaagaagtg ggacaagtac
1080
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3572

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accatccgct aacacccgcc tgccagagcg gaaaccgggg gtggggggag acactcattt
1140
ctaggcccca tcaccagtca cttgatttcg tgaccttgat ttcttccccc aaatttaata
1200
aagacagagg gttctcatga ttcacattgg ttgtgctatt gctgatgtta tgctttggtt
1260
gcttggttgg tcttttctga gtattttagt gttgccacct ggatttgctg cattgctctg
1320
ctgagctgta ttgaaaccat gactgggccc actgtcagac agaaattaga ataggaggca
1380
cattttttac ctggtggtta tgagcatgga cttggggggcc acagtgactg agtttgattc
1440
ccgacacagc ctcctccttg ctgtgtagtt ttgggtaagc ttattaaacc cccatgcctc
1500
agtttggtca cctgtaaaag gaaataacaa gagcacttac tttataagat tgatgtgagt
1560
attaagtgaa ttaatatttg taaaacgctt agctcttaat aaatgtttct gttgttatta
1620
aaaaaaaaaa aaaaaaaa
1638


<210> 4382
<211> 325
<212> PRT
<213> Homo sapiens

<400> 4382
Met Ala Gln Tyr Lys Gly Thr Met Arg Glu Ala Gly Arg Ala Met His
1               5                   10                  15
Leu Leu Lys Lys Arg Glu Arg Gln Arg Glu Gln Met Glu Val Leu Lys
            20                  25                  30
Gln Arg Ile Ala Glu Glu Thr Ile Leu Lys Ser Gln Val Asp Lys Arg
        35                  40                  45
Phe Ser Ala His Tyr Asp Ala Val Glu Ala Glu Leu Lys Ser Ser Ala
    50                  55                  60
Val Gly Leu Val Thr Leu Asn Asp Met Lys Ala Arg Gln Glu Ala Leu
65                  70                  75                  80
Val Arg Glu Arg Glu Arg Gln Leu Ala Lys Arg Gln His Leu Glu Glu
                85                  90                  95
Gln Arg Leu Gln Gln Glu Arg Gln Arg Glu Gln Glu Gln Arg Arg Glu
            100                 105                 110
Arg Lys Arg Lys Ile Ser Cys Leu Ser Phe Ala Leu Asp Asp Leu Asp
            115                 120                 125
Asp Gln Ala Asp Ala Ala Glu Ala Arg Arg Ala Gly Asn Leu Gly Lys
        130                 135                 140
Asn Pro Asp Val Asp Thr Ser Phe Leu Pro Asp Arg Asp Arg Glu Glu
145                 150                 155                 160
Glu Glu Asn Arg Leu Arg Glu Glu Leu Arg Gln Glu Trp Glu Ala Gln
                165                 170                 175
Arg Glu Lys Val Lys Asp Glu Glu Met Glu Val Thr Phe Ser Tyr Trp
            180                 185                 190
Asp Gly Ser Gly His Arg Arg Thr Val Arg Val Arg Lys Gly Asn Thr
        195                 200                 205
Val Gln Gln Phe Leu Lys Lys Ala Leu Gln Gly Leu Arg Lys Asp Phe
```

```
      210                 215                 220
Leu Glu Leu Arg Ser Ala Gly Val Glu Gln Leu Met Phe Ile Lys Glu
225                 230                 235                 240
Asp Leu Ile Leu Pro His Tyr His Thr Phe Tyr Asp Phe Ile Ile Ala
                245                 250                 255
Arg Ala Arg Gly Lys Ser Gly Pro Leu Phe Ser Phe Asp Val His Asp
            260                 265                 270
Asp Val Arg Leu Leu Ser Asp Ala Thr Met Glu Lys Asp Glu Ser His
            275                 280                 285
Ala Gly Lys Val Val Leu Arg Ser Trp Tyr Glu Lys Asn Lys His Ile
        290                 295                 300
Phe Pro Ala Ser Arg Trp Glu Ala Tyr Asp Pro Glu Lys Lys Trp Asp
305                 310                 315                 320
Lys Tyr Thr Ile Arg
                325
```

```
<210> 4383
<211> 419
<212> DNA
<213> Homo sapiens


<400> 4383
cgagatctgg cgtgttttat acagtttgaa aatgtcaaca tttactatgg gactcagcat
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aaaatgaaat ataaagcgcc cactgactat tgctttgttt taaagcaccc ccaaattcag
120
aaggagtccc agtatatcaa gtatctctgc tgtgatgaca caagaaccct taaccagtgg
180
gtcatgggaa tacggatagc caagtatggg aagactctct atgataacta ccagcgggct
240
gtggcaaagg ctggacttgc ctctcggtgg acaaacttgg ggacagtcaa tgcagctgca
300
ccagctcagc catttacagg acctaaaaca ggcaccaccc agcccaatgg acagattccc
360
caggctacac atttcttcag tgctgttctc caagaagccc agagacatgc tgaaaactn
419


<210> 4384
<211> 139
<212> PRT
<213> Homo sapiens


<400> 4384
Arg Asp Leu Ala Cys Phe Ile Gln Phe Glu Asn Val Asn Ile Tyr Tyr
1               5                   10                  15
Gly Thr Gln His Lys Met Lys Tyr Lys Ala Pro Thr Asp Tyr Cys Phe
                20                  25                  30
Val Leu Lys His Pro Gln Ile Gln Lys Glu Ser Gln Tyr Ile Lys Tyr
            35                  40                  45
Leu Cys Cys Asp Asp Thr Arg Thr Leu Asn Gln Trp Val Met Gly Ile
        50                  55                  60
Arg Ile Ala Lys Tyr Gly Lys Thr Leu Tyr Asp Asn Tyr Gln Arg Ala
65                  70                  75                  80
Val Ala Lys Ala Gly Leu Ala Ser Arg Trp Thr Asn Leu Gly Thr Val
```

```
                        85                90                95
Asn Ala Ala Ala Pro Ala Gln Pro Phe Thr Gly Pro Lys Thr Gly Thr
                    100                105                110
Thr Gln Pro Asn Gly Gln Ile Pro Gln Ala Thr His Phe Phe Ser Ala
        115                120                125
Val Leu Gln Glu Ala Gln Arg His Ala Glu Asn
    130                135
```

```
<210> 4385
<211> 754
<212> DNA
<213> Homo sapiens
```

```
<400> 4385
ntttagagga gggtctgggc tagtttattt tctctctgga ggggtcttca gggagagcag
60
tcccggctgc tcaagcgggt gggaaggagc ggccactctt gctgaaaggt ggctgggaga
120
ggtcctggtc agagtcggag tcagagtccc aggaggggag tggagggctc aggcactggt
180
gccccttgtg gcctcttagg ctcgaggcct tgggacaggc ccccgagcac aaagtgaggc
240
tgtctatgga gttctgcagc acgtgcacag cagaccatat atcactcagt tccttctgga
300
ggtcatcctt ccagcagcca ctggctccct gcggtatctc ttcagtctcc ggacaggcgg
360
ctgtctcatg accctgctgc ttcatcttgg tcaggatttt gcggcatttc acctgcgttt
420
tctgcatttt ctgaatgttc accaagttct ctgagatctc atcctcctgc gcttcttcaa
480
gctgctgaat cttgatttgc tgcaagcagc tctccttctc caacatggtc actgagtggt
540
tcaggaactc gaaagccttg gtctgggcct gtaactggct cttgagtgac ccaagttcac
600
atcgcaggag cttctgggag tcgggaatca tcacaatggt cttggctttg actttggaag
660
agctggtctc caagggcttc acataccacc tgttcatgct ctcccatcag ggaccacgaa
720
gaaagtcctc agctgtgacg ctgaagtttg atca
754
```

```
<210> 4386
<211> 85
<212> PRT
<213> Homo sapiens
```

```
<400> 4386
Gly Cys Leu Trp Ser Ser Ala Ala Arg Ala Gln Gln Thr Ile Tyr His
1               5               10                15
Ser Val Pro Ser Gly Gly His Pro Ser Ser Ser His Trp Leu Pro Ala
            20                25                30
Val Ser Leu Gln Ser Pro Asp Arg Arg Leu Ser His Asp Pro Ala Ala
        35                40                45
Ser Ser Trp Ser Gly Phe Cys Gly Ile Ser Pro Ala Phe Ser Ala Phe
```

```
        50                    55                   60
Ser Glu Cys Ser Pro Ser Ser Leu Arg Ser His Pro Pro Ala Leu Leu
65                    70                   75                   80
Gln Ala Ala Glu Ser
                  85


<210> 4387
<211> 341
<212> DNA
<213> Homo sapiens


<400> 4387
ggggggggcc ttcccatctt tttcccttttt atggggggg ggttttttaa aaaaaaaggg
60
gggcccccc aaaaggggg ggggggaagg gggttttccc acccaaaaa accccccccc
120
ccccccgggn ggggggaag ggggggggg ttttccccc ctcccccccc ccctaaaaaa
180
aaaacccgga aaatttttt tccccccccc ccaaaaaaaa aaaaaaaacc ggggggcccc
240
cctttttttg ggggggggg tttttttttt tttttttttt tttttttttt tttttttac
300
aaaacagaga atgtttattg tgccagaggg tggagtgtgc n
341


<210> 4388
<211> 113
<212> PRT
<213> Homo sapiens


<400> 4388
Gly Gly Gly Leu Pro Ile Phe Phe Pro Phe Met Gly Gly Gly Phe Phe
 1               5                   10                  15
Lys Lys Lys Gly Gly Pro Pro Gln Lys Gly Gly Gly Gly Arg Gly Phe
              20                  25                  30
Ser His Pro Lys Lys Pro Pro Pro Pro Gly Xaa Gly Gly Arg Gly
          35                  40                  45
Gly Gly Phe Phe Pro Pro Pro Pro Pro Lys Lys Lys Thr Arg Lys
      50                  55                  60
Ile Phe Phe Pro Pro Pro Pro Lys Lys Lys Lys Lys Pro Gly Gly Pro
65                  70                  75                   80
Pro Phe Phe Gly Gly Gly Gly Phe Phe Phe Phe Phe Phe Phe Phe Phe
              85                  90                   95
Phe Phe Phe Tyr Lys Thr Glu Asn Val Tyr Cys Ala Arg Gly Trp Ser
          100                 105                 110
Val


<210> 4389
<211> 1895
<212> DNA
<213> Homo sapiens


<400> 4389
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gctgccgagg gccgcgcggt gtacgtggtg gacgacgcag ctgtcctggg cgcagaggac
120
ccagcggtgt acggcgattc tgcccgtgag aaggcattgc gtggagctct gcgagcctcc
180
gtggaacgac gcctgagtcg ccacgacgtc gtcatcctgg actcgcttaa ctacatcaaa
240
ggtttccgtt acgagctcta ctgcctggca cgggcggcgc gcaccccgct ctgcctggtc
300
tactgcgtac ggcccggcgg cccgatcgcg ggacctcagg tggcgggcgc gaacgagaac
360
cctggccgga acgtcagtgt gagttggcgg ccacgcgctg aggaggacgg gagagcccag
420
gcggcgggca gcagcgtcct cagggaactg catactgcgg actctgtagt aaatggaagt
480
gcccaggccg acgtacccaa ggaactggag cgagaagaat ccggggctgc ggagtctcca
540
gctcttgtga ctccggattc agagaaatct gcaaagcatg ggtccggtgc cttttactct
600
cccgaactcc tggaggccct aacgctgcgc tttgaggctc ccgattctcg gaatcgctgg
660
gaccggcctt tattcacttt ggtgggcata gaggagccgt tgcccccggc ggggatccgc
720
tctgccctgt ttgagaaccg ggccccacca ccccatcagt ctacgcagtc ccagcccctc
780
gcctccggca gctttctgca ccagttggac caggtcacga gtcaagtact ggccggattg
840
atggaagcgc agaagagcgc tgtccccggg gacttgctca cgcttcctgg taccacagag
900
cacttgcggt ttacccggcc cttgaccatg gcagaactga gtcgccttcg tcgccagttt
960
atttcgtaca ctaaaatgca tcccaacaat gagaacttgc cgcaactggc caacatgttt
1020
cttcagtatt tgagccagag cctgcactaa ccagaggagg taggggggaa gccatggctt
1080
ctgatctcca ctccacttta tttctctggg aaaaataggc tgcaggtctc cagagcatat
1140
cgatgcagta ctgtactaga gctgttgtga ctgattcact caaactttcc tgcataccct
1200
tgtgccaggc cttgggttta cagcataagt tcagactaaa gagaatggag aactattgtg
1260
gtgcaacctg gcaaatccct cagaggacag agctaaggtg gacagggatt acctagattg
1320
gatcctactt gggctatcac agagcattga ccattggctt ccctcatctg aggcgtggga
1380
gagcagactg gatagatgag aattgtttta aaacaattgt gaacagaaac tgaagatggt
1440
acagttctac atctgcacct gccttttttt cataccacaa aagtattttt tgagtactgt
1500
actgactttt tgctagtttc tattctggga ccgagttcac agataaatcc attggtttgt
1560
atccttgaga aactttgttt ttgtggaagt aagaaagtta tctactagat tatttcctct
1620
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3577

aataaaatct tttaaaatag tctactggaa tctctttcac ttaatgttcc ctgtgtaact
1680
tcatgtaaca ttttaggtat acttgtcatt gttctgcctt taagtgaagt agtattttga
1740
tagttctgag agagtagatg ttttgagcta ctctacagta attatattat gacaatttcc
1800
gtaactgttt tgcttcattc tgcatttcaa ggcaaatatc attgtaagct tgtctttcat
1860
tcttcattga tttcattgaa caaatggtag gtacc
1895

<210> 4390
<211> 335
<212> PRT
<213> Homo sapiens

<400> 4390
Arg Val Ala Arg Gly Val Ala Ala Glu Gly Arg Ala Val Tyr Val Val
1   5   10   15
Asp Asp Ala Ala Val Leu Gly Ala Glu Asp Pro Ala Val Tyr Gly Asp
            20   25   30
Ser Ala Arg Glu Lys Ala Leu Arg Gly Ala Leu Arg Ala Ser Val Glu
            35   40   45
Arg Arg Leu Ser Arg His Asp Val Val Ile Leu Asp Ser Leu Asn Tyr
    50   55   60
Ile Lys Gly Phe Arg Tyr Glu Leu Tyr Cys Leu Ala Arg Ala Ala Arg
65   70   75   80
Thr Pro Leu Cys Leu Val Tyr Cys Val Arg Pro Gly Gly Pro Ile Ala
                85   90   95
Gly Pro Gln Val Ala Gly Ala Asn Glu Asn Pro Gly Arg Asn Val Ser
            100   105   110
Val Ser Trp Arg Pro Arg Ala Glu Glu Asp Gly Arg Ala Gln Ala Ala
            115   120   125
Gly Ser Ser Val Leu Arg Glu Leu His Thr Ala Asp Ser Val Val Asn
    130   135   140
Gly Ser Ala Gln Ala Asp Val Pro Lys Glu Leu Glu Arg Glu Glu Ser
145   150   155   160
Gly Ala Ala Glu Ser Pro Ala Leu Val Thr Pro Asp Ser Glu Lys Ser
                165   170   175
Ala Lys His Gly Ser Gly Ala Phe Tyr Ser Pro Glu Leu Leu Glu Ala
            180   185   190
Leu Thr Leu Arg Phe Glu Ala Pro Asp Ser Arg Asn Arg Trp Asp Arg
            195   200   205
Pro Leu Phe Thr Leu Val Gly Ile Glu Glu Pro Leu Pro Pro Ala Gly
    210   215   220
Ile Arg Ser Ala Leu Phe Glu Asn Arg Ala Pro Pro Pro His Gln Ser
225   230   235   240
Thr Gln Ser Gln Pro Leu Ala Ser Gly Ser Phe Leu His Gln Leu Asp
                245   250   255
Gln Val Thr Ser Gln Val Leu Ala Gly Leu Met Glu Ala Gln Lys Ser
            260   265   270
Ala Val Pro Gly Asp Leu Leu Thr Leu Pro Gly Thr Thr Glu His Leu
    275   280   285
Arg Phe Thr Arg Pro Leu Thr Met Ala Glu Leu Ser Arg Leu Arg Arg

```
            290                    295                    300
    Gln Phe Ile Ser Tyr Thr Lys Met His Pro Asn Asn Glu Asn Leu Pro
    305                    310                    315                    320
    Gln Leu Ala Asn Met Phe Leu Gln Tyr Leu Ser Gln Ser Leu His
                       325                    330                    335
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<210> 4391
<211> 988
<212> DNA
<213> Homo sapiens

<400> 4391

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120
ggaggtggca tgcgaccccc acccaactcc ctcgccggcc caggcctgcc tgccatgaac
180
atgggcccag gagttcgtgg cccgtgggcc agcccagtg gaaactcgat cccctactcc
240
tcctcatccc ccggcagcta caccggaccc ccaggaggag gtgggccccc tggaacaccc
300
atcatgccta gccctggaga ttccaccaac tccagcgaaa acatgtacac tatcatgaac
360
cccatcgggc agggcgccgg cagggctaat ttcccgctcg ccctggcccc ggagggcccc
420
atggccgcca tgagcgcgat ggagcctcac cacgtgaacg atccctgggg ctcgggcgac
480
atggacgggt tgccgaagag ttcccccggc gccgtggccg gcctgagcaa cgccccgggc
540
accccgcggg acgacggcga gatggcggcc gccgggacct tcctgcaccc gttcccgagc
600
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660
tgcgggccta ggcttctgcc cagcgcccct gctcagggcg aggggctgag gtcacacctc
720
gggcacctgg actcctggcc aatcaaggct tgcccagctg ggaggcccca cacgaaagac
780
tcttaccatt ttattaaaaa cgcaaggacc tcagagacgt tcttttctgt atggaccctt
840
cctgccattt gtattttgtc ccagagagaa aggctctttg gggggcccct ctccccagga
900
cgtcaggggg tggggcccat aaataaatgg aagctggttt tggtttttgg taaaaaaaaa
960
aaaaaaaaaa aaaaaaaaaa aaaaaaaa
988
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<210> 4392
<211> 211
<212> PRT
<213> Homo sapiens

<400> 4392

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Xaa Pro Phe Ser Trp Pro His Gly Ala Ser Pro Arg Ala Gln Gly His
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  1                    5                    10                   15
Pro Ser Met Gly Gly Pro Met Gln Arg Val Thr Pro Pro Arg Gly Met
                20                   25                   30
Ala Ser Val Gly Pro Gln Ser Tyr Gly Gly Gly Met Arg Pro Pro Pro
            35                   40                   45
Asn Ser Leu Ala Gly Pro Gly Leu Pro Ala Met Asn Met Gly Pro Gly
        50                   55                   60
Val Arg Gly Pro Trp Ala Ser Pro Ser Gly Asn Ser Ile Pro Tyr Ser
65                   70                   75                   80
Ser Ser Ser Pro Gly Ser Tyr Thr Gly Pro Pro Gly Gly Gly Gly Pro
                85                   90                   95
Pro Gly Thr Pro Ile Met Pro Ser Pro Gly Asp Ser Thr Asn Ser Ser
            100                  105                  110
Glu Asn Met Tyr Thr Ile Met Asn Pro Ile Gly Gln Gly Ala Gly Arg
        115                  120                  125
Ala Asn Phe Pro Leu Gly Pro Gly Pro Glu Gly Pro Met Ala Ala Met
    130                  135                  140
Ser Ala Met Glu Pro His His Val Asn Gly Ser Leu Gly Ser Gly Asp
145                  150                  155                  160
Met Asp Gly Leu Pro Lys Ser Ser Pro Gly Ala Val Ala Gly Leu Ser
                165                  170                  175
Asn Ala Pro Gly Thr Pro Arg Asp Asp Gly Glu Met Ala Ala Ala Gly
            180                  185                  190
Thr Phe Leu His Pro Phe Pro Ser Glu Ser Tyr Ser Pro Gly Met Thr
    195                  200                  205
Met Ser Val
    210
```

<210> 4393
<211> 2171
<212> DNA
<213> Homo sapiens

<400> 4393

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cctttccacc tggtggtgtt cggcgcgtct ggcttcaccg gccagttcgt gaccgaggag
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180
tcccgggaga agctgcagcg ggtgctggag aaggcggccc tgaagctggg aagaccaaca
240
ctgtcatctg aagttggaat catcatctgt gatattgcta atccagcctc gcttgatgaa
300
atggctaaac aggcaacagt tgtcctcaat tgcgtaggac catatcggtt ttatggagaa
360
cctgtaataa aagcatgtat tgaaaatgga gccagttgta tcgacatcag tggagaacct
420
cagtttctgg aactaatgca actgaagtat catgagaaag ctgcagacaa aggggtttat
480
atcattggaa gcagcggctt tgactccatt ccagcagatc tgggagtaat atataccaga
540
aataaaatga atggtacttt gactgctgtg aaagtttcc tgactataca ttcaggacct
600
```

```
gaggggttga gcattcatga tggtacctgg aagtcagcaa tttatggttt tggagatcag
660
agtaatttga gaaaactaag aaatgtatca aatctgaaac ctgtcccgct cattggtcca
720
aaattgaaga gaaggtggcc aatttcttat tgtcgggaac tcaaaggtta ttccattcct
780
tttatgggat ctgatgtgtc tgttgtaagg aggactcaac gttacttgta tgaaaattta
840
gaggaatcac cagttcagta tgctgcgtat gtaactgtgg gaggcatcac ctctgttatt
900
aagctgatgt ttgcaggact tttctttttg ttctttgtga ggtttggaat tggaaggcaa
960
cttctcataa aattcccatg gttcttctcc tttggctatt tttcaaaaca aggcccaaca
1020
caaaaacaga ttgatgctgc ctcattcacg ctgacattct ttggtcaagg atacagccaa
1080
ggcactggta cagataagaa caaaccaaat atcaaaattt gtactcaggt gaaaggacca
1140
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1200
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1260
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1320
gaagtctaaa cactggaaga attaactgaa gtcataacgt gcgtgaatta acagcttctc
1380
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1440
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1500
tctgagttga ttttgtgatt ttattgctta taacagagaa ctcatatttg acatattttt
1560
ttcattgatg tgttcctggt agattttcac gaatgagctg gcaggtctaa tgggggaggc
1620
ggcgtcccag tctgtgttgc agcagcattc tcatcggggg tgcgcacacc atcgttactg
1680
tcgggcagta actgccgctt gccttgccgc agtaggaggg aaatctcacc ttccttccac
1740
atactgtctt gagcctttgc taaattaaac tgcacttttt gctgtttttg cctagttttt
1800
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1860
aatggtggtt taatgtttgg acctgccgat gtatttgtat agtggtagaa acatgctgct
1920
taagtggcct aacctgtttc ttgccaataa gtaggcttat cattttatct ttacgtaatt
1980
ctatatctgt gactaggttt ttaaggatac agcttataag ttgctatcaa ttttcactac
2040
ctaagcagaa ttttctcta atttactttt tgtattttaa ctaggtttta catggaagcc
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2160
tagcaaattg a
2171
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3581

<210> 4394
<211> 428
<212> PRT
<213> Homo sapiens

<400> 4394
Met Ala Thr Glu Gln Arg Pro Phe His Leu Val Val Phe Gly Ala Ser
1   5   10   15
Gly Phe Thr Gly Gln Phe Val Thr Glu Glu Val Ala Arg Glu Gln Val
            20   25   30
Asp Pro Glu Arg Ser Ser Pro Ala Leu Gly Val Ala Gly Arg Ser Arg
        35   40   45
Glu Lys Leu Gln Arg Val Leu Glu Lys Ala Ala Leu Lys Leu Gly Arg
    50   55   60
Pro Thr Leu Ser Ser Glu Val Gly Ile Ile Ile Cys Asp Ile Ala Asn
65   70   75   80
Pro Ala Ser Leu Asp Glu Met Ala Lys Gln Ala Thr Val Val Leu Asn
            85   90   95
Cys Val Gly Pro Tyr Arg Phe Tyr Gly Glu Pro Val Ile Lys Ala Cys
            100   105   110
Ile Glu Asn Gly Ala Ser Cys Ile Asp Ile Ser Gly Glu Pro Gln Phe
            115   120   125
Leu Glu Leu Met Gln Leu Lys Tyr His Glu Lys Ala Ala Asp Lys Gly
    130   135   140
Val Tyr Ile Ile Gly Ser Ser Gly Phe Asp Ser Ile Pro Ala Asp Leu
145   150   155   160
Gly Val Ile Tyr Thr Arg Asn Lys Met Asn Gly Thr Leu Thr Ala Val
            165   170   175
Glu Ser Phe Leu Thr Ile His Ser Gly Pro Glu Gly Leu Ser Ile His
            180   185   190
Asp Gly Thr Trp Lys Ser Ala Ile Tyr Gly Phe Gly Asp Gln Ser Asn
            195   200   205
Leu Arg Lys Leu Arg Asn Val Ser Asn Leu Lys Pro Val Pro Leu Ile
    210   215   220
Gly Pro Lys Leu Lys Arg Arg Trp Pro Ile Ser Tyr Cys Arg Glu Leu
225   230   235   240
Lys Gly Tyr Ser Ile Pro Phe Met Gly Ser Asp Val Ser Val Val Arg
            245   250   255
Arg Thr Gln Arg Tyr Leu Tyr Glu Asn Leu Glu Glu Ser Pro Val Gln
            260   265   270
Tyr Ala Ala Tyr Val Thr Val Gly Gly Ile Thr Ser Val Ile Lys Leu
            275   280   285
Met Phe Ala Gly Leu Phe Phe Leu Phe Phe Val Arg Phe Gly Ile Gly
    290   295   300
Arg Gln Leu Leu Ile Lys Phe Pro Trp Phe Phe Ser Phe Gly Tyr Phe
305   310   315   320
Ser Lys Gln Gly Pro Thr Gln Lys Gln Ile Asp Ala Ala Ser Phe Thr
            325   330   335
Leu Thr Phe Phe Gly Gln Gly Tyr Ser Gln Gly Thr Gly Thr Asp Lys
            340   345   350
Asn Lys Pro Asn Ile Lys Ile Cys Thr Gln Val Lys Gly Pro Glu Ala
            355   360   365
Gly Tyr Val Ala Thr Pro Ile Ala Met Val Gln Ala Ala Met Thr Leu

3582

```
        370                375                380
Leu Ser Asp Ala Ser His Leu Pro Lys Ala Gly Gly Val Phe Thr Pro
385                390                395                400
Gly Ala Ala Phe Ser Lys Thr Lys Leu Ile Asp Arg Leu Asn Lys His
                405                410                415
Gly Ile Glu Phe Ser Val Ile Ser Ser Ser Glu Val
        420                425
```

<210> 4395
<211> 1893
<212> DNA
<213> Homo sapiens

<400> 4395

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120
ccttctcctc tgcaggcgct gaggatcacg catcctgtga ctctcccctg tcccccgcca
180
ccctctgaac cactggccac catggctact tcaaagttgc ccgtggtgcc tggggaggag
240
gaaaacacca tccttatggc caaggaaagg ctggaggccc tgcgcacagc ctttgagtcg
300
ggtgacctcc cccaggccgc ctctcacctc caggagctgc tggcctccac ggaaagcatc
360
cgcctggagg tgggcgtcac gggcgagtcg ggcgcgggca gtcctccct catcaatgcc
420
ctgcgtggcc tggaggccga ggaccctggc gcggctctca cgggcgtcat ggagaccacg
480
atgcaaccgt cgccctatcc acacccacag ttccctgacg tgaccctctg ggacctgcca
540
ggagccggct ctccaggctg cccggctgac aagtacctaa agcaggtaga cttcagccgc
600
tatgacttct tcctgctggt ctcccccgc cgctgcgggg ccgtcgagac ccgcctggcc
660
gctgagatcc tgtgccaggg caagaagttc tactttgtgc gcaccaaggt ggacgaggac
720
ctggcggcca cgcgcaccca gcggccgtcg ggcttcagag aggccgctgt cctgcaggag
780
atccgagacc actgtgccga gcggctgcgg gaggccggcg tggctgaccc tcgcatcttc
840
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900
cacgacctgc cctcccaccg gcgccacgct ggcctgctgt cgctccccga catctcgctg
960
gaggccttgc agaagaagaa ggccatgctt caagagcaag tcctcaagac cgccctggtg
1020
ttgggcgtca tccaggccct gccggtccca gggctggcgg ccgcctacga tgatgcgttg
1080
ctcatccact cactgcgtgg ctaccaccgc agctttggtc tggacgacga ctcgctggcc
1140
aagctggccg agcaggtggg caaacaggca ggtgacctgc gctcggtcat ccgctcccca
1200
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```
ctggccaacg aggtctcgcc tgagactgtc ctgcggctct attcccagtc gtccgacggc
1260
gccatgcggg tggcccgcgc ctttgagagg ggcatccctg tgtttgggac gctggtggct
1320
ggcggcatca gctttggcgc tgtctacacc atgctccagg gctgcctcaa cgagatggct
1380
gaggacgccc agcgtgtccg catcaaggcc ctggaggatg acgagccgca gccggaggtc
1440
agcttggaag tggccagtga caatggcgtg gaaaaggggg gctccgggga gggaggtggg
1500
gaggaagccc cactctcaac ctgcaggaag ctcggcctcc ttcttaagta cattctggac
1560
agctggaaga aacacgactc agaagagaaa taaagagtgc agccccgccc ccctgcctca
1620
cccacaaact aagtcttaac aaaatccaaa ttaccaacaa aaaaggccga tgtggtgaat
1680
gtgagggctg cagttgcctg gggggtgggt gtggagggag cctgtgtccc tggcaggcag
1740
gggagccggc gtcctgggca gggcaaagga gggggcactg gggaggggag gagggaggca
1800
ggtgggccca gggccaacag gggtgtagtg aaaggggaca ggagtgccct ggagagggag
1860
gttggagaca tggatggtgg gcccagggtt ccc
1893


<210> 4396
<211> 463
<212> PRT
<213> Homo sapiens

<400> 4396
Met Ala Thr Ser Lys Leu Pro Val Val Pro Gly Glu Glu Glu Asn Thr
1               5                   10                  15
Ile Leu Met Ala Lys Glu Arg Leu Glu Ala Leu Arg Thr Ala Phe Glu
            20                  25                  30
Ser Gly Asp Leu Pro Gln Ala Ala Ser His Leu Gln Glu Leu Leu Ala
        35                  40                  45
Ser Thr Glu Ser Ile Arg Leu Glu Val Gly Val Thr Gly Glu Ser Gly
    50                  55                  60
Ala Gly Lys Ser Ser Leu Ile Asn Ala Leu Arg Gly Leu Glu Ala Glu
65                  70                  75                  80
Asp Pro Gly Ala Ala Leu Thr Gly Val Met Glu Thr Thr Met Gln Pro
                85                  90                  95
Ser Pro Tyr Pro His Pro Gln Phe Pro Asp Val Thr Leu Trp Asp Leu
                100                 105                 110
Pro Gly Ala Gly Ser Pro Gly Cys Pro Ala Asp Lys Tyr Leu Lys Gln
            115                 120                 125
Val Asp Phe Ser Arg Tyr Asp Phe Phe Leu Leu Val Ser Pro Arg Arg
        130                 135                 140
Cys Gly Ala Val Glu Thr Arg Leu Ala Ala Glu Ile Leu Cys Gln Gly
145                 150                 155                 160
Lys Lys Phe Tyr Phe Val Arg Thr Lys Val Asp Glu Asp Leu Ala Ala
                165                 170                 175
Thr Arg Thr Gln Arg Pro Ser Gly Phe Arg Glu Ala Ala Val Leu Gln
```

```
                 180                    185                    190
Glu Ile Arg Asp His Cys Ala Glu Arg Leu Arg Glu Ala Gly Val Ala
            195                    200                    205
Asp Pro Arg Ile Phe Leu Val Ser Asn Leu Ser Pro Ala Arg Tyr Asp
        210                    215                    220
Phe Pro Thr Leu Val Ser Thr Trp Glu His Asp Leu Pro Ser His Arg
225                    230                    235                    240
Arg His Ala Gly Leu Leu Ser Leu Pro Asp Ile Ser Leu Glu Ala Leu
                245                    250                    255
Gln Lys Lys Lys Ala Met Leu Gln Glu Gln Val Leu Lys Thr Ala Leu
            260                    265                    270
Val Leu Gly Val Ile Gln Ala Leu Pro Val Pro Gly Leu Ala Ala Ala
            275                    280                    285
Tyr Asp Asp Ala Leu Leu Ile His Ser Leu Arg Gly Tyr His Arg Ser
        290                    295                    300
Phe Gly Leu Asp Asp Asp Ser Leu Ala Lys Leu Ala Glu Gln Val Gly
305                    310                    315                    320
Lys Gln Ala Gly Asp Leu Arg Ser Val Ile Arg Ser Pro Leu Ala Asn
                325                    330                    335
Glu Val Ser Pro Glu Thr Val Leu Arg Leu Tyr Ser Gln Ser Ser Asp
            340                    345                    350
Gly Ala Met Arg Val Ala Arg Ala Phe Glu Arg Gly Ile Pro Val Phe
            355                    360                    365
Gly Thr Leu Val Ala Gly Gly Ile Ser Phe Gly Ala Val Tyr Thr Met
        370                    375                    380
Leu Gln Gly Cys Leu Asn Glu Met Ala Glu Asp Ala Gln Arg Val Arg
·385                    390                    395                    400
Ile Lys Ala Leu Glu Asp Asp Glu Pro Gln Pro Glu Val Ser Leu Glu
                405                    410                    415
Val Ala Ser Asp Asn Gly Val Glu Lys Gly Gly Ser Gly Glu Gly Gly
            420                    425                    430
Gly Glu Glu Ala Pro Leu Ser Thr Cys Arg Lys Leu Gly Leu Leu Leu
            435                    440                    445
Lys Tyr Ile Leu Asp Ser Trp Lys Lys His Asp Ser Glu Glu Lys
    450                    455                    460
```

<210> 4397
<211> 2543
<212> DNA
<213> Homo sapiens

<400> 4397

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nccggcccc gctccgggga gcagagtccg gagcgggatc cgcggcccac aggttgcgag
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gggcggtgtt gaagaatgtg tgggcgaaca tcctgtcact tacctagaga tgttctcacg
120
agagcttgcg cctaccagga tcggcggggc cagcagcggc tcccggagtg gagggaccct
180
gataagtact gcccctctta caacaagagt cctcaatcca acagcccagt gcttctgtct
240
cgactgcact ttgagaagga tgcagactca tctgagcgta tcattgctcc catgcgctgg
300
ggcttggtcc cttcttggtt caaagaaagt gatccttcca agctgcagtt caatactacc
360
```

```
aactgtcgta gtgataccgt aatggagaaa cggtcattta aggtgcctct gggaaaggga
420
agacgctgtg tcgttttagc agatggattc tatgagtggc agcgatgtca gggaacaaac
480
cagaggcagc catacttcat ctattttcct caaatcaaga cagagaagtc aggtagcatt
540
ggtgctgcag atagtcctga gaactgggag aaagtctggg acaactggag gctgctgaca
600
atggccggga tctttgactg ctgggagccc ccagagggag gagatgtcct gtattcctat
660
accatcatca cagtggattc ctgcaaaggc ttgagtgaca tccaccacag gatgcctgcc
720
atattagatg gagaggaggc agttctaaa tggcttgact ttggtgaagt ctcaactcag
780
gaagctctga aattaatcca cccaacagag aacatcacct tccatgcagt ctcttctgtg
840
gtgaacaact cgcgaaacaa cactcctgag tgtctggctc ctgtcgactt ggtggtcaaa
900
aaggagctca gggcaagtgg cagtagccag aggatgttgc agtggttggc cacaaagtca
960
cccaaaaagg aagactcaaa aacacctcaa aaggaagagt cagatgttcc ccagtggtcc
1020
agtcagttcc tgcagaagag tccactcccc accaagagag gcactgcagg actcctagag
1080
caatggctga gcgggagaa ggaggaggaa cctgtggcca agcgtcctta cagccagtga
1140
cacaggactt tcagagacca aggccaggt ctgctgcact gctgttctga taataggttc
1200
ttaacattgt atgtatatgt gtttgctttg ggaggaggtg gcactgtgtt agttgacagt
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1320
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1380
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1440
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1500
ggctctttca cttttttagt tcttaaaaat ttattttaa gttctaaaat aaaataaaaa
1560
taagttctta aaatttattt ttttcctgaa taaattgtat ttggtaaact tctgcctaca
1620
ttttggaaag tgatgctggt ggggaaagtt ctagatctta cttggtttct tctagaatca
1680
gtcttcagga atggattttg tcacaaatgg ggcatggggg ctttctgagg aaataactac
1740
aagtcttggt ggtgggctcc ttattatgtt tctttttctt tcattcttga tacttggaag
1800
tcgtctgaat cctttagctt caaaccagcc tgagtttgag tgcttgccgt agcagaaact
1860
atccttacca caggtgggaa ggaaaggacc agttctagc agtgtcgggc cactcctctt
1920
tcgaacatcc ctaagggagg cattcacaaa agctgtccca agcagctgga agaaaacagc
1980
```

3586

```
ttccgagatg accaggagga ctgggcggcg ccgagcccag aacgctcctg gcgcagcacc
2040
gttggcgttg gccgattgct gctggtgggg ggcggggggtg caggccccag tctctatgca
2100
aatcagggat cagaagatcg gaattccac caatcagcgg gaagcctcgg ccctgtaact
2160
gctaatggga gacagcagcg ccacgccaca ggcttttccc ctggtttcgg gaggggtggg
2220
gagccaggtg gggctcccgc ccagacccct tcccgaggtc cgccctctcc gccttttctc
2280
taaattcctc ttttgagtgc cctcccttcc ggttgagagg cgggggttgg cccgtagttg
2340
tacactcagt caccctgcac tgtggaggcg ggggcctccc ttgtggactg atttgcgtgg
2400
gatttggttg ttttattaag agatttaaaa aattcagatg acttactagt atgactgttt
2460
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2520
aaaaaaaaaa aaaaaaaaaa aaa
2543
```

```
<210> 4398
<211> 354
<212> PRT
<213> Homo sapiens
```

```
<400> 4398
Met Cys Gly Arg Thr Ser Cys His Leu Pro Arg Asp Val Leu Thr Arg
1               5                   10                  15
Ala Cys Ala Tyr Gln Asp Arg Arg Gly Gln Gln Arg Leu Pro Glu Trp
            20                  25                  30
Arg Asp Pro Asp Lys Tyr Cys Pro Ser Tyr Asn Lys Ser Pro Gln Ser
        35                  40                  45
Asn Ser Pro Val Leu Leu Ser Arg Leu His Phe Glu Lys Asp Ala Asp
    50                  55                  60
Ser Ser Glu Arg Ile Ile Ala Pro Met Arg Trp Gly Leu Val Pro Ser
65                  70                  75                  80
Trp Phe Lys Glu Ser Asp Pro Ser Lys Leu Gln Phe Asn Thr Thr Asn
                85                  90                  95
Cys Arg Ser Asp Thr Val Met Glu Lys Arg Ser Phe Lys Val Pro Leu
                100                 105                 110
Gly Lys Gly Arg Arg Cys Val Val Leu Ala Asp Gly Phe Tyr Glu Trp
            115                 120                 125
Gln Arg Cys Gln Gly Thr Asn Gln Arg Gln Pro Tyr Phe Ile Tyr Phe
        130                 135                 140
Pro Gln Ile Lys Thr Glu Lys Ser Gly Ser Ile Gly Ala Ala Asp Ser
145                 150                 155                 160
Pro Glu Asn Trp Glu Lys Val Trp Asp Asn Trp Arg Leu Leu Thr Met
                165                 170                 175
Ala Gly Ile Phe Asp Cys Trp Glu Pro Pro Glu Gly Gly Asp Val Leu
            180                 185                 190
Tyr Ser Tyr Thr Ile Ile Thr Val Asp Ser Cys Lys Gly Leu Ser Asp
        195                 200                 205
Ile His His Arg Met Pro Ala Ile Leu Asp Gly Glu Glu Ala Val Ser
```

```
          210                215                220
Lys Trp Leu Asp Phe Gly Glu Val Ser Thr Gln Glu Ala Leu Lys Leu
225                230                235                240
Ile His Pro Thr Glu Asn Ile Thr Phe His Ala Val Ser Ser Val Val
              245                250                255
Asn Asn Ser Arg Asn Asn Thr Pro Glu Cys Leu Ala Pro Val Asp Leu
          260                265                270
Val Val Lys Lys Glu Leu Arg Ala Ser Gly Ser Ser Gln Arg Met Leu
      275                280                285
Gln Trp Leu Ala Thr Lys Ser Pro Lys Lys Glu Asp Ser Lys Thr Pro
      290                295                300
Gln Lys Glu Glu Ser Asp Val Pro Gln Trp Ser Ser Gln Phe Leu Gln
305                310                315                320
Lys Ser Pro Leu Pro Thr Lys Arg Gly Thr Ala Gly Leu Leu Glu Gln
          325                330                335
Trp Leu Lys Arg Glu Lys Glu Glu Glu Pro Val Ala Lys Arg Pro Tyr
      340                345                350
Ser Gln
```

```
<210> 4399
<211> 723
<212> DNA
<213> Homo sapiens

<400> 4399
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gggaaagacc gtgtgattct ggccttggag aaggaacttg gcgtgcaggc tgggcagacc
120
cagaagctgc ttctgcagaa agaggctttg gatgagcagc tggttcaggt caaggaggcc
180
gagcggcacc acagtagtcc aaagagagag ctcccgcccg ggatcgggga catggtggag
240
ctcatgggcg tccaggatca acatatggac gagcgagatg tgaggcgatt tcaactaaaa
300
attgctgaac tgaattcagt gatacggaag ctggaagaca gaaatacgct gttggcagat
360
gagaggaatg aactgctgaa acgctcacga gagaccgagg ttcagctgaa gcccctggtg
420
gagaagaaca gcggatgaa caagaagaat gaggatctgt tgcagagtat ccagaggatg
480
gaggagaaaa tcaagaacct cacgcgggaa aacgtggaaa tgaaagaaaa gctgtcagcg
540
caggcgtctc tgaagcggca tacctccttg aatgacctca gcctgacgag ggatgagcag
600
gagatcgagt tcctgaggct gcaggtgctg gagcagcagc acgtcattga cgacctctca
660
ctggagagag aacggctgtt gcgctccaaa aggcatcgag ggaaaagtct gaaaccgccc
720
aag
723

<210> 4400
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                                    3588

<211> 241
<212> PRT
<213> Homo sapiens

<400> 4400
Val His Arg Ile Lys Arg Glu Cys Glu Arg Asp Ile Arg Arg Leu Met
 1   5   10   15
Asp Glu Ile Lys Gly Lys Asp Arg Val Ile Leu Ala Leu Glu Lys Glu
            20   25   30
Leu Gly Val Gln Ala Gly Gln Thr Gln Lys Leu Leu Leu Gln Lys Glu
            35   40   45
Ala Leu Asp Glu Gln Leu Val Gln Val Lys Glu Ala Glu Arg His His
        50   55   60
Ser Ser Pro Lys Arg Glu Leu Pro Pro Gly Ile Gly Asp Met Val Glu
65   70   75   80
Leu Met Gly Val Gln Asp Gln His Met Asp Glu Arg Asp Val Arg Arg
                85   90   95
Phe Gln Leu Lys Ile Ala Glu Leu Asn Ser Val Ile Arg Lys Leu Glu
            100   105   110
Asp Arg Asn Thr Leu Leu Ala Asp Glu Arg Asn Glu Leu Leu Lys Arg
            115   120   125
Ser Arg Glu Thr Glu Val Gln Leu Lys Pro Leu Val Glu Lys Asn Lys
        130   135   140
Arg Met Asn Lys Lys Asn Glu Asp Leu Leu Gln Ser Ile Gln Arg Met
145   150   155   160
Glu Glu Lys Ile Lys Asn Leu Thr Arg Glu Asn Val Glu Met Lys Glu
            165   170   175
Lys Leu Ser Ala Gln Ala Ser Leu Lys Arg His Thr Ser Leu Asn Asp
            180   185   190
Leu Ser Leu Thr Arg Asp Glu Gln Glu Ile Glu Phe Leu Arg Leu Gln
        195   200   205
Val Leu Glu Gln Gln His Val Ile Asp Asp Leu Ser Leu Glu Arg Glu
        210   215   220
Arg Leu Leu Arg Ser Lys Arg His Arg Gly Lys Ser Leu Lys Pro Pro
225   230   235   240
Lys

<210> 4401
<211> 1131
<212> DNA
<213> Homo sapiens

<400> 4401
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120
agaaaggtga tccaaggaat cacatgtgag aaaaacagtg ctctagcaaa gggatcctcg
180
aatcaaaggc atcgagaata tttttaaata ctaatgcctt tttgctattt ccggggaaag
240
gctggattgt gctaccgacg ctcaatatcc atgcaccccg gatctggaag actttgccgg
300

3589

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420
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480
aaaagcatca ctgtcatctg tgacttttac agcctgatca ggctgcattt tatcccccgc
540
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600
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660
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720
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780
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840
tatccctacc cgcagtattt cactcagctg tccgaggaca gctctgggga catcataaat
900
gtgaacattg ccgccgctag tttgatggtc catgttgtgt taccgggaat ggtggagaga
960
aagaaaggtg ccatcgtcac gatctcttct gggctcctgc tgcaacccac tcctcagctg
1020
gctgcatttt ctgcttctaa ggcttattta gaccacttca gcagagcctt gcaatatgaa
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1131


<210> 4402
<211> 252
<212> PRT
<213> Homo sapiens

<400> 4402
Met Ala Ala Val Asp Ser Phe Tyr Leu Leu Tyr Arg Glu Ile Ala Arg
 1               5                  10                  15
Ser Cys Asn Cys Tyr Met Glu Ala Leu Ala Leu Val Gly Ala Trp Tyr
            20                  25                  30
Thr Ala Arg Lys Ser Ile Thr Val Ile Cys Asp Phe Tyr Ser Leu Ile
            35                  40                  45
Arg Leu His Phe Ile Pro Arg Leu Gly Ser Arg Ala Asp Leu Ile Lys
        50                  55                  60
Gln Tyr Gly Arg Trp Ala Val Val Ser Gly Ala Thr Asp Gly Ile Gly
65                  70                  75                  80
Lys Ala Tyr Ala Glu Glu Leu Ala Ser Arg Gly Leu Asn Ile Ile Leu
                85                  90                  95
Ile Ser Arg Asn Glu Glu Lys Leu Gln Val Val Ala Lys Asp Ile Ala
            100                 105                 110
Asp Thr Tyr Lys Val Glu Thr Asp Ile Ile Val Ala Asp Phe Ser Ser
            115                 120                 125
Gly Arg Glu Ile Tyr Leu Pro Ile Arg Glu Ala Leu Lys Asp Lys Asp
        130                 135                 140
Val Gly Ile Leu Val Asn Asn Val Gly Val Phe Tyr Pro Tyr Pro Gln
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3590

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     145                      150                      155                      160
     Tyr Phe Thr Gln Leu Ser Glu Asp Lys Leu Trp Asp Ile Ile Asn Val
                      165                      170                      175
     Asn Ile Ala Ala Ala Ser Leu Met Val His Val Val Leu Pro Gly Met
                      180                      185                      190
     Val Glu Arg Lys Lys Gly Ala Ile Val Thr Ile Ser Ser Gly Leu Leu
                      195                      200                      205
     Leu Gln Pro Thr Pro Gln Leu Ala Ala Phe Ser Ala Ser Lys Ala Tyr
                      210                      215                      220
     Leu Asp His Phe Ser Arg Ala Leu Gln Tyr Glu Tyr Ala Ser Lys Gly
     225                      230                      235                      240
     Ile Phe Val Gln Ser Leu Xaa Pro Phe Tyr Val Ala
                      245                      250
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<210> 4403
<211> 4237
<212> DNA
<213> Homo sapiens

<400> 4403

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180
aacagaatgt ggcaaccaga atggggaatg catcagcaac ccccacaccc ccctccagat
240
cagccatgga tgccaccaac accaggccca atggacattg ttcctccttc tgaagacagc
300
aacagtcagg acagtgggga atttgcccct gacaacaggc atatatttaa ccagaacaat
360
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420
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480
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600
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660
aagcagaaga aattggagaa agaaagaatg gaacaacaac gttcacaatt gtccaaaaaa
720
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900
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960
ctggatgtca cagatgaaga aatttattac gtagccaaag atgcacaccg caaagcaacg
1020
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aaagctcctg caaaacagct ggcacagtcc agtgcactgg cttccctcac tggactcggt
1080

ggactgggtg gttatggatc aggagacagt gaagatgaga ggagtgacag aggatctgag
1140

tcatctgaca ctgatgatga agaattacgg catcgaatcc ggcaaaaaca ggaagctttt
1200

tggagaaaag aaaaagaaca gcagctatta catgataaac agatggaaga agaaaagcag
1260

caaacagaaa gggttacaaa agagatgaat gaatttatcc ataaagagca aaatagttta
1320

tcactactag aagcaagaga agcagacggt gatgtggtta atgaaaagaa gagaactcca
1380

aatgaaacca catcagtttt agaaccaaaa aaagagcata agaaaaaga aaaacaagga
1440

aggagtaggt cgggaagttc tagtagtggt agttccagta gcaatagcag aactagtagt
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1560

tctcggtctt cttctcctaa aaggaaaaag agacacagta ggagtagatc tccaacaatc
1620

aaagctagac gtagcaggag tagaagctat tctcgcagaa ttaaaataga gagcaatagg
1680

gctagggtaa agattagaga tagaaggaga tctaatagaa atagcattga aagagaaaga
1740

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1800

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1860

ggaaatctta gtgggaacag tcataagcat aaaggtgagg ctaaagaaca agagaggaaa
1920

aaggagagga gtcgaagtat agataaagat aggaaaaaga aagacaaaga aagggaacgt
1980

gaacaggata aaagaaaaga gaaacaaaaa agggaagaaa aagattttaa gttcagtagt
2040

caggatgata gattaaaaag gaaacgagaa agtgaaagaa cattttctag gagtggttct
2100

atatctgtta aaatcataag acatgattct agacaggata gtaagaaaag tactaccaaa
2160

gatagtaaaa aacattcagg ctctgattct agtggaagga gcagttctga gtctccagga
2220

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2280

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2340

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2460

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2520

taaaatacat ttttattttt aaattttgtc ttttcccttt tttttcagat caacaacccc
2580

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2640

3592

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2760
ttacttaata ggatttcttt gtattacgtt tttttcaaaa aatatagtgc ataataagac
2820
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2880
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3180
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3240
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3360
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3960
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4140
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4237
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<210> 4404
<211> 779
<212> PRT
<213> Homo sapiens

<400> 4404
Xaa Ile Gln Ala Ile Leu Ile Gly Leu His Trp Pro Lys Leu Gly Leu
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Pro Thr Arg Glu Ala Ser Gly Gln Gln Ser Met Val Glu Gln Pro Pro
            20   25   30
Gly Met Met Pro Asn Gly Gln Asp Met Ser Thr Met Glu Ser Gly Pro
            35   40   45
Asn Asn His Gly Asn Phe Gln Gly Asp Ser Asn Phe Asn Arg Met Trp
        50   55   60
Gln Pro Glu Trp Gly Met His Gln Gln Pro Pro His Pro Pro Pro Asp
65   70   75   80
Gln Pro Trp Met Pro Pro Thr Pro Gly Pro Met Asp Ile Val Pro Pro
                85   90   95
Ser Glu Asp Ser Asn Ser Gln Asp Ser Gly Glu Phe Ala Pro Asp Asn
            100   105   110
Arg His Ile Phe Asn Gln Asn Asn His Asn Phe Gly Gly Pro Pro Asp
        115   120   125
Asn Phe Ala Val Gly Pro Val Asn Gln Phe Asp Tyr Gln His Gly Ala
    130   135   140
Ala Phe Gly Pro Pro Gln Gly Gly Phe His Pro Pro Tyr Trp Gln Pro
145   150   155   160
Gly Pro Pro Gly Pro Pro Ala Pro Pro Gln Asn Arg Arg Glu Arg Pro
                165   170   175
Ser Ser Phe Arg Asp Arg Gln Arg Ser Pro Ile Ala Leu Pro Val Lys
            180   185   190
Gln Glu Pro Pro Gln Ile Asp Ala Val Lys Arg Arg Thr Leu Pro Ala
        195   200   205
Trp Ile Arg Glu Gly Leu Glu Lys Met Glu Arg Glu Lys Gln Lys Lys
    210   215   220
Leu Glu Lys Glu Arg Met Glu Gln Gln Arg Ser Gln Leu Ser Lys Lys
225   230   235   240
Lys Lys Lys Ala Thr Glu Asp Ala Glu Gly Gly Asp Gly Pro Arg Leu
                245   250   255
Pro Gln Arg Ser Lys Phe Asp Ser Asp Glu Glu Glu Glu Asp Thr Glu
                260   265   270
Asn Val Glu Ala Ala Ser Ser Gly Lys Val Thr Arg Ser Pro Ser Pro
            275   280   285
Val Pro Gln Glu Glu His Ser Asp Pro Glu Met Thr Glu Glu Glu Lys
    290   295   300
Glu Tyr Gln Met Met Leu Leu Thr Lys Met Leu Leu Thr Glu Ile Leu
305   310   315   320
Leu Asp Val Thr Asp Glu Glu Ile Tyr Tyr Val Ala Lys Asp Ala His
                325   330   335
Arg Lys Ala Thr Lys Ala Pro Ala Lys Gln Leu Ala Gln Ser Ser Ala
                340   345   350
Leu Ala Ser Leu Thr Gly Leu Gly Gly Leu Gly Gly Tyr Gly Ser Gly
        355   360   365
Asp Ser Glu Asp Glu Arg Ser Asp Arg Gly Ser Glu Ser Ser Asp Thr

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              370                      375                    380
Asp Asp Glu Glu Leu Arg His Arg Ile Arg Gln Lys Gln Glu Ala Phe
385                     390                    395                    400
Trp Arg Lys Glu Lys Glu Gln Gln Leu Leu His Asp Lys Gln Met Glu
                         405                    410                    415
Glu Glu Lys Gln Gln Thr Glu Arg Val Thr Lys Glu Met Asn Glu Phe
                         420                    425                    430
Ile His Lys Glu Gln Asn Ser Leu Ser Leu Leu Glu Ala Arg Glu Ala
             435                    440                    445
Asp Gly Asp Val Val Asn Glu Lys Lys Arg Thr Pro Asn Glu Thr Thr
     450                    455                    460
Ser Val Leu Glu Pro Lys Lys Glu His Lys Glu Lys Glu Lys Gln Gly
465                    470                    475                    480
Arg Ser Arg Ser Gly Ser Ser Ser Ser Gly Ser Ser Ser Ser Asn Ser
                 485                    490                    495
Arg Thr Ser Ser Thr Ser Ser Thr Val Ser Ser Ser Ser Tyr Ser Ser
             500                    505                    510
Ser Ser Gly Ser Ser Arg Thr Ser Ser Arg Ser Ser Ser Pro Lys Arg
         515                    520                    525
Lys Lys Arg His Ser Arg Ser Arg Ser Pro Thr Ile Lys Ala Arg Arg
     530                    535                    540
Ser Arg Ser Arg Ser Tyr Ser Arg Arg Ile Lys Ile Glu Ser Asn Arg
545                    550                    555                    560
Ala Arg Val Lys Ile Arg Asp Arg Arg Arg Ser Asn Arg Asn Ser Ile
                 565                    570                    575
Glu Arg Glu Arg Arg Arg Asn Arg Ser Pro Ser Arg Glu Arg Arg Arg
             580                    585                    590
Ser Arg Ser Arg Ser Arg Asp Arg Arg Thr Asn Arg Ala Ser Arg Ser
     595                    600                    605
Arg Ser Arg Asp Arg Arg Lys Ile Asp Asp Gln Arg Gly Asn Leu Ser
     610                    615                    620
Gly Asn Ser His Lys His Lys Gly Glu Ala Lys Glu Gln Glu Arg Lys
625                    630                    635                    640
Lys Glu Arg Ser Arg Ser Ile Asp Lys Asp Arg Lys Lys Lys Asp Lys
                 645                    650                    655
Glu Arg Glu Arg Glu Gln Asp Lys Arg Lys Glu Lys Gln Lys Arg Glu
             660                    665                    670
Glu Lys Asp Phe Lys Phe Ser Ser Gln Asp Asp Arg Leu Lys Arg Lys
         675                    680                    685
Arg Glu Ser Glu Arg Thr Phe Ser Arg Ser Gly Ser Ile Ser Val Lys
     690                    695                    700
Ile Ile Arg His Asp Ser Arg Gln Asp Ser Lys Lys Ser Thr Thr Lys
705                    710                    715                    720
Asp Ser Lys Lys His Ser Gly Ser Asp Ser Ser Gly Arg Ser Ser Ser
                 725                    730                    735
Glu Ser Pro Gly Ser Ser Lys Glu Lys Lys Ala Lys Lys Pro Lys His
         740                    745                    750
Ser Arg Ser Arg Ser Val Glu Lys Ser Gln Arg Ser Gly Lys Lys Ala
     755                    760                    765
Ser Arg Lys His Lys Ser Lys Ser Arg Ser Arg
     770                    775
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<210> 4405
<211> 918

<212> DNA
<213> Homo sapiens

<400> 4405
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120
aggaccagat ctttttgagag ctgagggttg agggcattga gccaacacac agatttgtcg
180
cctctgtccc cgaagacacc tgcaccctcc atgcggagcc aagatgggga atggaactga
240
ggaagattat aactttgtct tcaagggtac tatcgtggtg cagtgggggc cctcctggtg
300
tttgacctaa ccaagcacca gacctatgct gtggtggagc gatggctgaa ggagctctat
360
gaccatgctg aagccacgat cgtcgtcatg ctcgtgggta acaaaagtga cctcagccag
420
gcccgggaag tgcccactga ggaggcccga atgttcgctg aaaacaatgg actgctcttc
480
ctggagacct cagccctgga ctctaccaat gttgagctag ccttttgagac tgtcctgaaa
540
gaaatctttg cgaaggtgtc caagcagaga cagaacagca tccggaccaa tgccatcact
600
ctgggcagtg cccaggctgg acaggagcct ggccctgggg agaagagggc ctgttgcatc
660
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720
acttcagccc caggacccttt ccttgccctt tggttccaga tatcagactg ttccctgttc
780
acagcacccct cagggtctta aggtcttcat gccctatcac aaatacctct tttatctgtc
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900
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918

<210> 4406
<211> 138
<212> PRT
<213> Homo sapiens

<400> 4406

Leu	Cys	Leu	Gln	Gly	Tyr	Tyr	Arg	Gly	Ala	Val	Gly	Ala	Leu	Leu	Val
1				5					10					15	

Phe	Asp	Leu	Thr	Lys	His	Gln	Thr	Tyr	Ala	Val	Val	Glu	Arg	Trp	Leu
			20				25					30			

Lys	Glu	Leu	Tyr	Asp	His	Ala	Glu	Ala	Thr	Ile	Val	Val	Met	Leu	Val
		35				40					45				

Gly	Asn	Lys	Ser	Asp	Leu	Ser	Gln	Ala	Arg	Glu	Val	Pro	Thr	Glu	Glu
	50					55					60				

Ala	Arg	Met	Phe	Ala	Glu	Asn	Asn	Gly	Leu	Leu	Phe	Leu	Glu	Thr	Ser
65				70					75					80	

Ala	Leu	Asp	Ser	Thr	Asn	Val	Glu	Leu	Ala	Phe	Glu	Thr	Val	Leu	Lys

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                   85                    90                    95
Glu Ile Phe Ala Lys Val Ser Lys Gln Arg Gln Asn Ser Ile Arg Thr
            100                   105                   110
Asn Ala Ile Thr Leu Gly Ser Ala Gln Ala Gly Gln Glu Pro Gly Pro
        115                   120                   125
Gly Glu Lys Arg Ala Cys Cys Ile Ser Leu
    130                   135
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<210> 4407
<211> 974
<212> DNA
<213> Homo sapiens

<400> 4407
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120
ttctctgtag tccttgagca gccatttgac caaataaatt taattttata atcaataaaa
180
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240
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300
atgtttgatg taggtggaca gagatctgag agaaagaagt ggattcactg ctttgaagga
360
gttacatgca ttatattttg tgctgcactt agtgcctatg acatggtcct cgtggaagac
420
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480
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gaaatttatt cccacatgac ctgtgctact gacacccaaa atgtcaagtt tgtgtttgac
720
gcagttacag atataataat caaagagaat ctaaaagact gtgggctttt ctaatcaact
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960
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974


<210> 4408
<211> 158
<212> PRT
<213> Homo sapiens
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<400> 4408
Arg Met Phe Asp Val Gly Gly Gln Arg Ser Glu Arg Lys Lys Trp Ile
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His Cys Phe Glu Gly Val Thr Cys Ile Ile Phe Cys Ala Ala Leu Ser
            20   25   30
Ala Tyr Asp Met Val Leu Val Glu Asp Glu Glu Val Asn Arg Met His
        35   40   45
Glu Ser Leu His Leu Phe Asn Ser Ile Cys Asn His Lys Tyr Phe Ser
    50   55   60
Thr Thr Ser Ile Val Leu Phe Leu Asn Lys Lys Asp Ile Phe Gln Glu
65   70   75   80
Lys Val Thr Lys Val His Leu Ser Ile Cys Phe Pro Glu Tyr Thr Gly
            85   90   95
Pro Asn Thr Phe Glu Asp Ala Gly Asn Tyr Ile Lys Asn Gln Phe Leu
            100   105   110
Asp Leu Asn Leu Lys Lys Glu Asp Lys Glu Ile Tyr Ser His Met Thr
    115   120   125
Cys Ala Thr Asp Thr Gln Asn Val Lys Phe Val Phe Asp Ala Val Thr
    130   135   140
Asp Ile Ile Ile Lys Glu Asn Leu Lys Asp Cys Gly Leu Phe
145   150   155

<210> 4409
<211> 4217
<212> DNA
<213> Homo sapiens

<400> 4409
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660
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3598

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4020
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4200
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4217

<210> 4410
<211> 405
<212> PRT
<213> Homo sapiens

<400> 4410
Glu Ser Ser Glu Glu Glu Glu Gly Glu Glu Gly Glu Ala Gly Gly Lys
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Gln Gly Pro Arg Gly Ser Arg Ser Ser Arg Ala Asp Pro Pro Pro His
            20   25   30
Ser His Met Ala Thr Arg Ser Arg Glu Asn Ala Arg Arg Arg Gly Thr
        35   40   45
Pro Glu Pro Glu Glu Ala Gly Arg Arg Gly Gly Lys Arg Pro Lys Pro
    50   55   60
Pro Pro Gly Val Ala Ser Ala Ser Ala Arg Gly Pro Pro Ala Thr Asp
65   70   75   80
Gly Leu Gly Ala Lys Val Lys Leu Glu Glu Lys Gln His His Pro Cys
            85   90   95
Gln Lys Cys Pro Arg Val Phe Asn Asn Arg Trp Tyr Leu Glu Lys His
            100   105   110
Met Asn Val Thr His Ser Arg Met Gln Ile Cys Asp Gln Cys Gly Lys
        115   120   125
Arg Phe Leu Leu Glu Ser Glu Leu Leu Leu His Arg Gln Thr Asp Cys
    130   135   140
Glu Arg Asn Ile Gln Cys Val Thr Cys Gly Lys Ala Phe Lys Lys Leu
145   150   155   160
Trp Ser Leu His Glu His Asn Lys Ile Val His Gly Tyr Ala Glu Lys
            165   170   175
Lys Phe Ser Cys Glu Ile Cys Glu Lys Lys Phe Tyr Thr Met Ala His
            180   185   190
Val Arg Lys His Met Val Ala His Thr Lys Asp Met Pro Phe Thr Cys
        195   200   205
Glu Thr Cys Gly Lys Ser Phe Lys Arg Ser Met Ser Leu Lys Val His
    210   215   220
Ser Leu Gln His Ser Gly Glu Lys Pro Phe Arg Cys Glu Asn Cys Asp
225   230   235   240
Glu Arg Phe Gln Tyr Lys Tyr Gln Leu Arg Ser His Met Ser Ile His
            245   250   255
Ile Gly His Lys Gln Phe Met Cys Gln Trp Cys Gly Lys Asp Phe Asn
            260   265   270
Met Lys Gln Tyr Phe Asp Glu His Met Lys Thr His Thr Gly Glu Lys
        275   280   285
Pro Phe Ile Cys Glu Ile Cys Gly Lys Ser Phe Thr Ser Arg Pro Asn
    290   295   300
Met Lys Arg His Arg Arg Thr His Thr Gly Glu Lys Pro Tyr Pro Cys

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305                    310                    315                    320
Asp Val Cys Gly Gln Arg Phe Arg Phe Ser Asn Met Leu Lys Ala His
                325                    330                    335
Lys Glu Lys Cys Phe Arg Val Ser His Thr Leu Ala Gly Asp Gly Val
                340                    345                    350
Pro Ala Ala Pro Gly Leu Pro Pro Thr Gln Pro Gln Ala His Ala Leu
            355                    360                    365
Pro Leu Leu Pro Gly Leu Pro Gln Thr Leu Pro Pro Pro Pro His Leu
        370                    375                    380
Pro Pro Pro Pro Pro Leu Phe Pro Thr Thr Ala Ser Pro Gly Gly Arg
385                    390                    395                    400
Met Asn Ala Asn Asn
                405
```

```
<210> 4411
<211> 484
<212> DNA
<213> Homo sapiens
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120
caaaagagga gtttagggtg gctatggtgc aggggcagct gtatgcttca cctcaaatgt
180
tactgtcttc tctctccatc aaggaggaag ggcccaggct ggggttagga gggctagggg
240
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300
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360
ttccaggtgg gcccaaccag gcggcccctg cctctaggca gcgcgtaggt ttccttgggc
420
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480
atcc
484
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```
<210> 4412
<211> 113
<212> PRT
<213> Homo sapiens
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<400> 4412
Met Val Gln Gly Gln Leu Tyr Ala Ser Pro Gln Met Leu Leu Ser Ser
1               5                   10                  15
Leu Ser Ile Lys Glu Glu Gly Pro Arg Leu Gly Leu Gly Gly Leu Gly
            20                  25                  30
Ala Gln Ala Val Cys Pro Leu Phe Ser Ser Trp Cys Pro Ala Pro Pro
        35                  40                  45
Arg Cys His Leu Pro Gln Trp Gln Trp Gly Phe Ile Thr Gly Ser Ser
        50                  55                  60
Gly Pro Leu Pro Met Ala Gly Gly Val Pro Gly Gly Pro Asn Gln Ala
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```
65                    70                    75                    80
Ala Pro Ala Ser Arg Gln Arg Val Gly Phe Leu Gly Gln Pro Gln Ser
                     85                    90                    95
Cys Gln Arg Gln His Val Ser Leu His Arg Ser His Gln Ala Pro Leu
               100                   105                   110
Asp
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```
<210> 4413
<211> 1097
<212> DNA
<213> Homo sapiens

<400> 4413
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gttgcctcca cagagcgcca gagaggcgtc agtttcaaac tggaagaaaa aaccgcccac
120
agcagcctgg cactcttcag agatgatacg ggtgtcaaat atggcttggt gggattggag
180
cccaccaagg tgccttgaat gtggagcgct ccgggagtt ggcaggtgct ggcagacaca
240
gcggtcacca gtggcagaca ctactgggaa gtgacagtga agcgctccca gcagttccgg
300
ataggagtgg cagatgtgga catgtcccgg gatagctgca ttggtgttga tgatcgttcc
360
tgggtgttca cctatgccca gcgcaagtgg tacaccatgt tggccaacga gaaagcccca
420
gttgagggta ttgggcagcc agagaaggtg gggctgttgc tggagtatga ggcccagaag
480
ctgagcctgg tggatgtgag ccaggtctct gtggttcaca cgctacagac agatttccgg
540
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600
gaggtgcccg agggcctcta gtatgtccat tactggagtc cctaatcacg cctttggcca
660
gcctcctttt gaaagtgtcc gaagcctttt tactttgcct caagcaacct ctagctccca
720
caattcagtg ttgggtcctc tgtgcaatat catgatcatc ttcctcatcc cctaccttgt
780
gaaagctagg catacagcca aaccctcctt ttccccaccc accaactact gccaatttcc
840
taggctacca tgggtgtatc ttccttgacc tgcttccttc agtccctctg cctccctttg
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960
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1080
aaaaaaaaaa aaaaaaa
1097
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<210> 4414
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<211> 65
<212> PRT
<213> Homo sapiens

<400> 4414
Met Ala Leu Leu Phe Ala Arg Ser Leu Arg Leu Cys Arg Trp Gly Ala
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Lys Arg Leu Gly Val Ala Ser Thr Glu Arg Gln Arg Gly Val Ser Phe
            20   25   30
Lys Leu Glu Glu Lys Thr Ala His Ser Ser Leu Ala Leu Phe Arg Asp
        35   40   45
Asp Thr Gly Val Lys Tyr Gly Leu Val Gly Leu Glu Pro Thr Lys Val
    50   55   60
Pro
65

<210> 4415
<211> 775
<212> DNA
<213> Homo sapiens

<400> 4415
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tccagcagaa agagacaaag atctttgttc aaaatattct gaaaaaggta aactaactgc
120
attattgaat acacaaagg aatgttaccg ttacttgttc atagtcaaag gtgaagttaa
180
aaaaaaaggg aagttaaata actgaagtaa tggtttgccc aaatagcaaa cgtaggatac
240
aggcgtgggc aaagagcagc tactgaagct catgaggagg atgctggata tagggtaggt
300
aacttgacaa atgcctctgc ttctttggaa ccttcttcct agatcacccc cacaaattcc
360
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420
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480
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540
aatctcctaa aatggaattt aaccagatag atatcgcttg agattttaaa gcaggagata
600
ccataagtaa tgatactcca ggcctgtaaa gcattttca ttgtcccaca ttgcagctaa
660
atgagtataa actcgacagt gttctgattt cacaacatat gcatttatga caactgctaa
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aacaacttta caggctcaaa cgataggttc caagggattt ttgttttgc ttaag
775

<210> 4416
<211> 100
<212> PRT
<213> Homo sapiens

3604

<400> 4416
Met Lys Asn Ala Leu Gln Ala Trp Ser Ile Ile Thr Tyr Gly Ile Ser
1   5   10   15
Cys Phe Lys Ile Ser Ser Asp Ile Tyr Leu Val Lys Phe His Phe Arg
            20   25   30
Arg Leu Arg Cys Arg Thr Leu Met Phe Ile Thr Ser Ser Tyr Pro Lys
        35   40   45
Arg Asn Gly Phe Arg His Val Leu Ser Gln Gln Glu Ile Asp Phe Phe
    50   55   60
Leu Asn Tyr Leu Ile Leu Leu Pro Asn Ile Thr Glu Val Met Arg Ser
65   70   75   80
Leu Val Thr Phe Gly Cys Cys Ala Leu Lys Glu Pro Gly Leu Glu Phe
                85   90   95
Val Gly Val Ile
            100

<210> 4417
<211> 980
<212> DNA
<213> Homo sapiens

<400> 4417
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120
aagctgtaca gccagtatga ggagaagctg caggaagaac agaggaagca cagtgctgag
180
aaggaggctc ttttggaaga aaccaatagt tttctgaaag cgattgaaga agccaataaa
240
aagatgcaag cagcagagat cagcctagag gagaaagacc agaggatcgg ggagctggac
300
aggctgattg agcgcatgga aaaggaacgt catcaactgc aacttcaact cctagaacat
360
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480
cagaagaaag tcaagcagat ggttgaggag attgagtcat taaagaaaaa agtgcaacag
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840
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900
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960

3605

gtgagcaggt aagagaggga
980

<210> 4418
<211> 263
<212> PRT
<213> Homo sapiens

<400> 4418
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Asn Gln Leu Leu Lys Met Lys Val Glu Ser Ser Gln Glu Ala Asn Ala
                20   25   30
Glu Val Met Arg Glu Met Thr Lys Lys Leu Tyr Ser Gln Tyr Glu Glu
            35   40   45
Lys Leu Gln Glu Glu Gln Arg Lys His Ser Ala Glu Lys Glu Ala Leu
        50   55   60
Leu Glu Glu Thr Asn Ser Phe Leu Lys Ala Ile Glu Glu Ala Asn Lys
65   70   75   80
Lys Met Gln Ala Ala Glu Ile Ser Leu Glu Glu Lys Asp Gln Arg Ile
                85   90   95
Gly Glu Leu Asp Arg Leu Ile Glu Arg Met Glu Lys Glu Arg His Gln
            100   105   110
Leu Gln Leu Gln Leu Leu Glu His Glu Thr Glu Met Ser Gly Glu Leu
            115   120   125
Thr Asp Ser Asp Lys Glu Arg Tyr Gln Gln Leu Glu Glu Ala Ser Ala
        130   135   140
Ser Leu Arg Glu Arg Ile Arg His Leu Asp Asp Met Val His Cys Gln
145   150   155   160
Gln Lys Lys Val Lys Gln Met Val Glu Glu Ile Glu Ser Leu Lys Lys
                165   170   175
Lys Val Gln Gln Lys Gln Leu Leu Ile Leu Gln Leu Leu Glu Lys Ile
            180   185   190
Ser Phe Leu Glu Gly Glu Asn Asn Glu Leu Gln Ser Arg Leu Asp Tyr
        195   200   205
Leu Thr Glu Thr Gln Ala Lys Thr Glu Val Glu Thr Arg Glu Ile Gly
        210   215   220
Val Gly Cys Asp Leu Leu Pro Ser Pro Thr Gly Arg Thr Arg Glu Ile
225   230   235   240
Val Met Pro Ser Arg Asn Tyr Thr Pro Tyr Thr Arg Val Leu Glu Leu
                245   250   255
Ser Ser Lys Lys Thr Leu Thr
                260

<210> 4419
<211> 369
<212> DNA
<213> Homo sapiens

<400> 4419
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120

cctccgcctc cccagctcaa gcaactctcc tgccccagcc acccaagtnn aaattacagg
180
cccgtgccac cacacccggc caatttctgt attttagta gagacgggt ttcaccatat
240
tggccaggac ggtctcaaac tcctggcccc atgtgatcct cccaccttgg cctcccaagg
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360
agtctcagn
369

<210> 4420
<211> 91
<212> PRT
<213> Homo sapiens

<400> 4420
Xaa Ile Pro Cys Ile Glu Ser Ala Arg Ile His Thr Ile Tyr Tyr Val
1   5   10   15
Phe Ile Leu Arg Gln Gly Leu Ala Leu Xaa Thr Gln Ala Gly Val Gln
            20   25   30
Trp Cys Asp Leu Gly Ser Leu Gln Pro Pro Pro Gln Leu Lys Gln
        35   40   45
Leu Ser Cys Pro Ser His Pro Ser Xaa Asn Tyr Arg Pro Val Pro Pro
    50   55   60
His Pro Ala Asn Phe Cys Ile Phe Ser Arg Asp Gly Val Ser Pro Tyr
65   70   75   80
Trp Pro Gly Arg Ser Gln Thr Pro Gly Pro Met
            85   90

<210> 4421
<211> 1356
<212> DNA
<213> Homo sapiens

<400> 4421
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120
ctggggtgtg ctagagagag gaaagctgga ggaggagagc tgagctggtg gttaccccat
180
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240
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300
cactccctcc ctgcccactc ctcccaaagt ccacctgttc ccgcaagagt cccacctcac
360
aagcaaccac cagaggctga tacaaatggc cgctgtattt ttgctaaagt gacagtgaca
420
cagataaggc aaagagctga ggggcaggac acatcagatg ggaagggga gaccgtgcaa
480
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540

3607

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720
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780
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1140
agtacaaaga ttcctcactg cgtgctaaga aaacagatcc cgggccgggc ccggttgctc
1200
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1260
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1320
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1356


<210> 4422
<211> 58
<212> PRT
<213> Homo sapiens


<400> 4422
Gly Arg Ala Arg Leu Leu Thr Pro Ile Ile Pro Ala Leu Trp Lys Ala
1               5                   10                  15
Glu Ala Gly Glu Ser Pro Glu Ile Arg Ser Ser Arg Pro Ala Trp Pro
                20                  25                  30
Thr Trp Gln Asn Pro Val Ser Thr Lys Asn Thr Lys Ile Cys Arg Ala
            35                  40                  45
Trp Trp Gln Met Pro Val Ile Pro Ala Thr
    50                  55


<210> 4423
<211> 2673
<212> DNA
<213> Homo sapiens


<400> 4423
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gaggatgacg aggtgccggt ggagcccgag tctgactccg gggacgagga agaggagggg
120
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cccattgtgc tgggcagacg acaaaaagct ttggggaaga accgcagtgc tgatttcaac
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<213> Homo sapiens

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Ser Gly Asp Glu Glu Glu Glu Gly Pro Ile Val Leu Gly Arg Arg Gln
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Lys Ala Leu Gly Lys Asn Arg Ser Ala Asp Phe Asn Pro Asp Phe Val
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Phe Thr Glu Lys Glu Gly Thr Tyr Asp Gly Ser Trp Ala Leu Ala Asp
65                  70                  75                  80
Val Met Ser Gln Leu Lys Lys Lys Arg Ala Ala Thr Thr Leu Asp Glu
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     Asp Val Lys Ser Gln Glu Ala Ala Leu Arg Ala Ala Pro Asp Ile Leu
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     Glu Val Lys Asp Leu Ala Ser Val Ser Leu Lys Asn Pro Val Arg Ile
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Leu Lys Gln Tyr Arg Ala Gly Pro Ser Phe Glu Glu Arg Lys Gln Leu
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 Asn Asn Pro Thr Lys Glu Asp Leu Gly Lys Leu Gln Pro Leu Val Ala
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3617

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865                      870                      875                      880
Gln Tyr Lys Glu Ile Leu Thr Pro Ser Trp Arg Glu Val Asp Leu Gln
                    885                      890                      895
Ser Leu Lys Gly Ser Pro Asp Glu Glu Asn Glu Glu Ile Glu Asp Leu
                900                      905                      910
Ser Asp Ala Ala Phe Ala Ala Leu His Ala Lys Cys Glu Glu Met Glu
            915                      920                      925
Arg Ala Arg Trp Leu Trp Thr Thr Ser Val Pro Pro Gln Arg Arg Gly
        930                      935                      940
Ser Arg Ser Tyr Arg Ser Ser Asp Gly Arg Thr Thr Pro Gln Leu Gly
945                      950                      955                      960
Ser Ala Asn Pro Ser Thr Pro Gln Pro Ala Ser Pro Asp Val Ser Ser
                965                      970                      975
Ser His Ser Leu Ser Glu Tyr Ser His Gly Gln Ser Pro Arg Ser Pro
            980                      985                      990
Ile Ser Pro Glu Leu His Ser Ala Pro Leu Thr Pro Val Ala Arg Asp
            995                      1000                     1005
Thr Leu Arg His Leu Ala Ser Glu Asp Thr Arg Cys Ser Thr Pro Glu
        1010                     1015                     1020
Leu Gly Leu Asp Glu Gln Ser Val Gln Pro Trp Glu Arg Arg Thr Phe
1025                     1030                     1035                     1040
Pro Leu Ala His Ser Pro Gln Ala Glu Cys Glu Asp Gln Leu Asp Ala
                1045                     1050                     1055
Gln Glu Arg Ala Ala Arg Cys Thr Arg Arg Thr Ser Gly Ser Lys Thr
            1060                     1065                     1070
Xaa Pro Gly Asp Arg Gly Ser Ala His Leu Ala Ser His Cys Pro Pro
            1075                     1080                     1085
Gln Glu Ser Ala Ser Gly Gly Ser Ser His Ser Ser Ala Pro Asp Ser
            1090                     1095                     1100
Gln Met Ser Gly Arg Gln Pro Ser Lys Gln Thr His
1105                     1110                     1115
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<210> 4427
<211> 4474
<212> DNA
<213> Homo sapiens

<400> 4427

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tcagacatca tgggcgcaag acacctggta gtatagaagc caggtccatc cttaaccaca
120
atgatgacct tcccctgctt gagaccaact gctacagctg aagcactggt gtctttggaa
180
gttttctcgg tcgtgataat ctccagcagc tgcatcttgt ccacgggaga gaagtagtgc
240
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300
gatgtgttac tggcaaagat acagtgatct ggaatcaccg cttctacttc ctttagcact
360
ctgtgcttaa gactaaggtc ctcaaacaca gcttcaatca ccatgtcggc cttttcaaaa
420
ccttggtaat caagctgccc agtcaagttg ctgaagatgg aatccctttc aaatgatgtt
480
```

agagctttct tcttcacttt gtcattcaat cctttgaaca cttgttgctg tcctcggcct
540
agcgcagtga gggtggcatc tttaagtata gtctttagcc ccttatccac ggagacttgg
600
gcgatgcctg ctcccatcag ccctgcacca agaatagcca gatgcttaac atccttctgt
660
cttttgttgc tattctgtat tggcatgaaa tggcaacctc aagtcctcct cccaggcagg
720
atccattgat ggcagccaca ataggctttg tggacttttc aagtttctca actattctct
780
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900
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960
aagatggtgg cctgccgggc gattggcatc ctcagccgct tttctgcctt caggatcctc
1020
cgctcccgag gttatatatg ccgcaatttt acagggtctt ctgctttgct gaccagaacc
1080
catattaact atggagtcaa aggggatgtg gcagttgttc gaattaactc tcccaattca
1140
aaggtaaata cactgagtaa agagctacat tcagagttct cagaagttat gaatgaaatc
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1260
gcaggtgctg atatcaacat gttagccgct tgcaagaccc ttcaagaagt aacacagcta
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1380
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1440
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1980
atgggactct accatggtca ggtcctgtgc aagaagaata aatttggagc cccacagaag
2040
gatgttaagc atctggctat tcttggtgca gggctgatgg gagcaggcat cgcccaagtc
2100

tccgtggata aggggctaaa gactatactt aaagatgcca ccctcactgc gctagaccga
2160

ggacagcaac aagtgttcaa aggattgaat gacaaagtga agaagaaagc tctaacatca
2220

tttgaaaggg attccatctt cagcaacttg actgggcagc ttgattacca aggttttgaa
2280

aaggccgaca tggtgattga agctgtgttt gaggacctta gtcttaagca cagagtgcta
2340

aaggaagtag aagcggtgat tccagatcac tgtatctttg ccagtaacac atctgctctc
2400

ccaatcagtg aaatcgctgc tgtcagcaaa agacctgaga aggtgattgg catgcactac
2460

ttctctcccg tggacaagat gcagctgctg gagattatca cgaccgagaa aacttccaaa
2520

gacaccagtg cttcagctgt agcagttggt ctcaagcagg ggaaggtcat cattgtggtt
2580

aaggatggac ctggcttcta tactaccagg tgtcttgcgc ccatgatgtc tgaagtcatc
2640

cgaatcctcc aggaaggagt tgacccgaag aagctggatt ccctgaccac aagctttggc
2700

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2760

gcggaagatc tgggcaaagt ctttggggag cggtttggag gtggaaaccc agaactgctg
2820

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2880

caggagggtg tgaagaggaa ggatttgaat tctgacatgg atagtatttt agcgagtctg
2940

aagctgcctc ctaagtctga agtctcatca gacgaagaca tccagttccg cctggtgaca
3000

agatttgtga atgaggcagt catgtgcctg caagagggga tcttggccac acctgcagag
3060

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3180

tatggaaaac agttccaccc atgccagctg ctagctgacc atgctaacag ccctaacaag
3240

aagttctacc agtgagcagg cctcatgcct cgctcagtca gttttcagat aagccggtgc
3300

aagaccgggg tttggtggtg acggacctca aagctgagag tgtggttctt gagcatcgca
3360

gctactgctc ggcaaaggcc cgggacagac actttgctgg ggatgtactg ggctatgtca
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ctccatggaa cagccatggc tacgatgtca ccaaggtctt tgggagcaag ttcacacaga
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tctcacccgt ctggctgcag ctgaagagac gtggccgtga gatgtttgag gtcacgggcc
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tccacgacgt ggaccagggg tggatgcgag ctgtcaggaa gcatgccaag ggcctgcaca
3600

tagtgcctcg gctcctgttt gaggactgga cttacgatga tttccggaac gtcttagaca
3660

gtgaggatga gatagaggag ctgagcaaga ccgtggtcca ggtggcaaag aaccagcatt
3720

3620

tcgatggctt cgtggtggag gtctggaacc agctgctaag ccagaagcgc gtgggcctca
3780

tccacatgct cacccacttg gccgaggctc tgcaccaggc ccggctgctg gccctcctgg
3840

tcatcccgcc tgccatcacc cccgggaccg accagctggg catgttcacg cacaaggagt
3900

ttgagcagct ggccccgtg ctggatggtt tcagcctcat gacctacgac tactctacag
3960

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4020

acccgaagtc caagtggcga agcaaaatcc tcctggggct caacttctat ggtatggact
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acgcgacctc caaggatgcc cgtgagcctg ttgtcggggc caggtacatc cagacactga
4140

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4200

agaagagccg cagtgggagg cacgtcgtct tctacccaac cctgaagtcc ctgcaggtgc
4260

ggctggagct ggcccgggag ctgggcgttg gggtctctat ctgggagctg ggccagggcc
4320

tggactactt ctacgacctg ctctaggtgg gcattgcggc ctccgcggtg gacgtgttct
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4440

gaaaaaaaaa aaaaaaaaa aaaaaaaaaa aaaa
4474

<210> 4428
<211> 763
<212> PRT
<213> Homo sapiens

<400> 4428

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Met Val Ala Cys Arg Ala Ile Gly Ile Leu Ser Arg Phe Ser Ala Phe
1               5                   10                  15
Arg Ile Leu Arg Ser Arg Gly Tyr Ile Cys Arg Asn Phe Thr Gly Ser
            20                  25                  30
Ser Ala Leu Leu Thr Arg Thr His Ile Asn Tyr Gly Val Lys Gly Asp
        35                  40                  45
Val Ala Val Val Arg Ile Asn Ser Pro Asn Ser Lys Val Asn Thr Leu
    50                  55                  60
Ser Lys Glu Leu His Ser Glu Phe Ser Glu Val Met Asn Glu Ile Trp
65                  70                  75                  80
Ala Ser Asp Gln Ile Arg Ser Ala Val Leu Ile Ser Ser Lys Pro Gly
                85                  90                  95
Cys Phe Ile Ala Gly Ala Asp Ile Asn Met Leu Ala Ala Cys Lys Thr
            100                 105                 110
Leu Gln Glu Val Thr Gln Leu Ser Gln Glu Ala Gln Arg Ile Val Glu
        115                 120                 125
Lys Leu Glu Lys Ser Thr Lys Pro Ile Val Ala Ala Ile Asn Gly Ser
        130                 135                 140
Cys Leu Gly Gly Gly Leu Glu Val Ala Ile Ser Cys Gln Tyr Arg Ile
145                 150                 155                 160
Ala Thr Lys Asp Arg Lys Thr Val Leu Gly Thr Pro Glu Val Leu Leu
```

```
                165                    170                    175
Gly Ala Leu Pro Gly Ala Gly Gly Thr Gln Arg Leu Pro Lys Met Val
            180                    185                    190
Gly Val Pro Ala Ala Leu Asp Met Met Leu Thr Gly Arg Ser Ile Arg
            195                    200                    205
Ala Asp Arg Ala Lys Lys Met Gly Leu Val Asp Gln Leu Val Glu Pro
    210                    215                    220
Leu Gly Pro Gly Leu Lys Pro Pro Glu Glu Arg Thr Ile Glu Tyr Leu
225                    230                    235                    240
Glu Glu Val Ala Ile Thr Phe Ala Lys Gly Leu Ala Asp Lys Lys Ile
                245                    250                    255
Ser Pro Lys Arg Asp Lys Gly Leu Val Glu Lys Leu Thr Ala Tyr Ala
            260                    265                    270
Met Thr Ile Pro Phe Val Arg Gln Gln Val Tyr Lys Lys Val Glu Glu
            275                    280                    285
Lys Val Arg Lys Gln Thr Lys Gly Leu Tyr Pro Ala Pro Leu Lys Ile
    290                    295                    300
Ile Asp Val Val Lys Thr Gly Ile Glu Gln Gly Ser Asp Ala Gly Tyr
305                    310                    315                    320
Leu Cys Glu Ser Gln Lys Phe Gly Glu Leu Val Met Thr Lys Glu Ser
            325                    330                    335
Lys Ala Leu Met Gly Leu Tyr His Gly Gln Val Leu Cys Lys Lys Asn
            340                    345                    350
Lys Phe Gly Ala Pro Gln Lys Asp Val Lys His Leu Ala Ile Leu Gly
            355                    360                    365
Ala Gly Leu Met Gly Ala Gly Ile Ala Gln Val Ser Val Asp Lys Gly
    370                    375                    380
Leu Lys Thr Ile Leu Lys Asp Ala Thr Leu Thr Ala Leu Asp Arg Gly
385                    390                    395                    400
Gln Gln Gln Val Phe Lys Gly Leu Asn Asp Lys Val Lys Lys Lys Ala
            405                    410                    415
Leu Thr Ser Phe Glu Arg Asp Ser Ile Phe Ser Asn Leu Thr Gly Gln
            420                    425                    430
Leu Asp Tyr Gln Gly Phe Glu Lys Ala Asp Met Val Ile Glu Ala Val
            435                    440                    445
Phe Glu Asp Leu Ser Leu Lys His Arg Val Leu Lys Glu Val Glu Ala
    450                    455                    460
Val Ile Pro Asp His Cys Ile Phe Ala Ser Asn Thr Ser Ala Leu Pro
465                    470                    475                    480
Ile Ser Glu Ile Ala Ala Val Ser Lys Arg Pro Glu Lys Val Ile Gly
            485                    490                    495
Met His Tyr Phe Ser Pro Val Asp Lys Met Gln Leu Leu Glu Ile Ile
            500                    505                    510
Thr Thr Glu Lys Thr Ser Lys Asp Thr Ser Ala Ser Ala Val Ala Val
            515                    520                    525
Gly Leu Lys Gln Gly Lys Val Ile Ile Val Val Lys Asp Gly Pro Gly
    530                    535                    540
Phe Tyr Thr Thr Arg Cys Leu Ala Pro Met Met Ser Glu Val Ile Arg
545                    550                    555                    560
Ile Leu Gln Glu Gly Val Asp Pro Lys Lys Leu Asp Ser Leu Thr Thr
            565                    570                    575
Ser Phe Gly Phe Pro Val Gly Ala Ala Thr Leu Val Asp Glu Val Gly
            580                    585                    590
Val Asp Val Ala Lys His Val Ala Glu Asp Leu Gly Lys Val Phe Gly
```

3622

```
          595                 600                 605
Glu Arg Phe Gly Gly Gly Asn Pro Glu Leu Leu Thr Gln Met Val Ser
      610                 615                 620
Lys Gly Phe Leu Gly Arg Lys Ser Gly Lys Gly Phe Tyr Ile Tyr Gln
625                 630                 635                 640
Glu Gly Val Lys Arg Lys Asp Leu Asn Ser Asp Met Asp Ser Ile Leu
                  645                 650                 655
Ala Ser Leu Lys Leu Pro Pro Lys Ser Glu Val Ser Ser Asp Glu Asp
              660                 665                 670
Ile Gln Phe Arg Leu Val Thr Arg Phe Val Asn Glu Ala Val Met Cys
          675                 680                 685
Leu Gln Glu Gly Ile Leu Ala Thr Pro Ala Glu Gly Asp Ile Gly Ala
      690                 695                 700
Val Phe Gly Leu Gly Phe Pro Pro Cys Leu Gly Gly Pro Phe Arg Phe
705                 710                 715                 720
Val Asp Leu Tyr Gly Ala Gln Lys Ile Val Asp Arg Leu Lys Lys Tyr
                  725                 730                 735
Glu Ala Ala Tyr Gly Lys Gln Phe Thr Pro Cys Gln Leu Leu Ala Asp
              740                 745                 750
His Ala Asn Ser Pro Asn Lys Lys Phe Tyr Gln
          755                 760
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<210> 4429
<211> 981
<212> DNA
<213> Homo sapiens

<400> 4429
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aatccaggca tcacttgccc ctgattttat ttcattttca cacactctgt ttaggagaca
120
ctgcttgctc caactggctc catctctccg ttaccggtga ggcaggcaca gtgctgcagt
180
ggcagaatgg aagtacccag gctgacttgc tctcagccag acacgacctc ttctctgagg
240
agggtgatgc caataaatgg aactccaata ggtaggcttc gctctgccct tccacaagtg
300
aacacacgcc gtgagtccct aaatcgccag gctccgcagc ctcgcagaaa gcctagtttc
360
cagacggtag gtatcccatt catcccttgg catcgggaac caaagggaat gcagacagat
420
cccggtcgtg cactacattc ccaaaccttg gcacgcacgc gaaggcttgg ggcgccccgg
480
cgcgcccttc ctccgaggcc tccaccaccc gcggactcac cactatgcga gctgaaccac
540
ctgggtgcga tgtgcagagg tagagcatcc gccagcgagg ttctgggagg cccggttacc
600
gcttcccgtt tttatggtng accgccgccg gtctcctggt aaccattgcc atgggcatag
660
gtggagtcgg acgcagaccc tccgccgccg ggcgccacta ccaccctgag gtgtccaaag
720
ccgccagcgt catcaaccag gccctgtcca tgcctgaggt cagcatcgcg cacaccaacg
780
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acacgccctt ctctctctct ctctctctct ctctctctct ctccccgtc tnnccctccc
840
gagttctccg gctctcgcgg ccggcggggc cgggcggcga acgaacgagc gagcgaacga
900
acgggcacgc gggccccgcc cgcgcacgcg ccgcgtcgcg gtggggggt gggtgtgcgg
960
agggaagcgc gcggcggcgg c
981

<210> 4430
<211> 151
<212> PRT
<213> Homo sapiens

<400> 4430
Met Glu Val Pro Arg Leu Thr Cys Ser Gln Pro Asp Thr Thr Ser Ser
1   5   10   15
Leu Arg Arg Val Met Pro Ile Asn Gly Thr Pro Ile Gly Arg Leu Arg
            20   25   30
Ser Ala Leu Pro Gln Val Asn Thr Arg Arg Glu Ser Leu Asn Arg Gln
        35   40   45
Ala Pro Gln Pro Arg Arg Lys Pro Ser Phe Gln Thr Val Gly Ile Pro
    50   55   60
Phe Ile Pro Trp His Arg Glu Pro Lys Gly Met Gln Thr Asp Pro Gly
65   70   75   80
Arg Ala Leu His Ser Gln Thr Leu Ala Arg Thr Arg Arg Leu Gly Ala
                85   90   95
Pro Arg Arg Ala Leu Pro Pro Arg Pro Pro Pro Ala Asp Ser Pro
            100   105   110
Leu Cys Glu Leu Asn His Leu Gly Ala Met Cys Arg Gly Arg Ala Ser
        115   120   125
Ala Ser Glu Val Leu Gly Gly Pro Val Thr Ala Ser Arg Phe Tyr Gly
    130   135   140
Xaa Pro Pro Pro Val Ser Trp
145   150

<210> 4431
<211> 507
<212> DNA
<213> Homo sapiens

<400> 4431
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ctgggtgacc gacccatccc cgtcaccttc aagagggcca tcgcagcgct ctccttctgg
120
cagaaggtca ggctggcttg gggcctgtgc ttcctgtcag accccatcag gtagggctgc
180
ccccgggacc ctggccggcc tgcagggtgg tctgtgggag gctccaggcc ctcctgtgca
240
ggtccaagcg cagccaatcc tcactcaagg ccttccctgc cctttccttc cgccacaaat
300
cccaaacaaa cgtgctgtgg tccctgcccg gtgtccacag tgccagcccc accctcccag
360

3624

```
cccgttgccc atccctgcgg ggctgcagcc atccctctcc acagcaagga tgacgtggaa
420
cgctgcaagc agaaggccta ctggagcaga tgatggccga gatgattggc gagttcccag
480
acctgcaccg caccatcgtt tttggag
507
```

<210> 4432
<211> 57
<212> PRT
<213> Homo sapiens

<400> 4432
```
Gly Gly Glu Phe Arg Glu Ala Phe Lys Glu Ala Ser Lys Val Pro Phe
 1               5                  10                  15
Cys Lys Phe His Leu Gly Asp Arg Pro Ile Pro Val Thr Phe Lys Arg
                20                  25                  30
Ala Ile Ala Ala Leu Ser Phe Trp Gln Lys Val Arg Leu Ala Trp Gly
                35                  40                  45
Leu Cys Phe Leu Ser Asp Pro Ile Arg
        50                  55
```

<210> 4433
<211> 447
<212> DNA
<213> Homo sapiens

<400> 4433
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ntgtacaaca cctcgtcgcc gagggagatg gtggcccagt tcctcctcgt ggacggcaac
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gtgaccaaca tcaccaccgt cagcctctgg gaagaattct cctccagcga cctcgcagat
120
ctccgcttcc tggacatgag ccagaaccag ttccagtacc tgccagacgg cttcctgagg
180
aaaatgcctt ccctctccca cctgaacctc caccagaatt gcctgatgac gcttcacatt
240
cgggagcacg agccccccgg agcgctcacc gagctggacc tgagccacaa ccagctgtcg
300
gagctgcacc tggctccggg gctggccagc tgcctgggca gcctgcgctt gttcaacctg
360
agctccaacc agctcctggg cgtccccect ggcctcttcg ccaatgctag gaacatcact
420
acacttgaca tgagccacaa tcagatc
447
```

<210> 4434
<211> 149
<212> PRT
<213> Homo sapiens

<400> 4434
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Xaa Tyr Asn Thr Ser Ser Pro Arg Glu Met Val Ala Gln Phe Leu Leu
 1               5                  10                  15
Val Asp Gly Asn Val Thr Asn Ile Thr Thr Val Ser Leu Trp Glu Glu
```

3625

```
              20                    25                    30
Phe Ser Ser Ser Asp Leu Ala Asp Leu Arg Phe Leu Asp Met Ser Gln
          35                    40                    45
Asn Gln Phe Gln Tyr Leu Pro Asp Gly Phe Leu Arg Lys Met Pro Ser
      50                    55                    60
Leu Ser His Leu Asn Leu His Gln Asn Cys Leu Met Thr Leu His Ile
65                    70                    75                    80
Arg Glu His Glu Pro Pro Gly Ala Leu Thr Glu Leu Asp Leu Ser His
              85                    90                    95
Asn Gln Leu Ser Glu Leu His Leu Ala Pro Gly Leu Ala Ser Cys Leu
              100                   105                   110
Gly Ser Leu Arg Leu Phe Asn Leu Ser Ser Asn Gln Leu Leu Gly Val
          115                   120                   125
Pro Pro Gly Leu Phe Ala Asn Ala Arg Asn Ile Thr Thr Leu Asp Met
      130                   135                   140
Ser His Asn Gln Ile
145


<210> 4435
<211> 783
<212> DNA
<213> Homo sapiens

<400> 4435
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cacccctttcg tggtcaatct gtggtactcc ttccaggatg aggaggacat gttcatggtg
120
gtggacctgc tcctgggagg cgacctgcgc taccatctgc agcagaatgt gcatttcaca
180
gaggggactg tgaaactcta catctgtgag ctggcactgg ccctggagta tcttcagagg
240
taccacatca tccacagaga catcaagcca gacaatatcc tgctggatga acacggacat
300
gttcacatta cagacttcaa catagcgacg gtagtgaaag gagcagaaag ggcttcctcc
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420
cccggatact cgtaccctgt cgactggtgg tccctgggca tcacagccta tgagctgctg
480
cggggctgga ggccgtacga aatccactcg gtcacgccca tcgatgaaat cctcaacatg
540
ttcaaggtgg agcgtgtcca ctactcctcc acgtggtgca aggggatggt ggccctgcta
600
aggaagctcc tgaccaagga tcctgagagc cgcgtgtcca gccttcatga catacagagc
660
gtgccctact tggccgacat gaactgggac gcggtgttca gaaggcact gatgcccggc
720
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780
cta
783


<210> 4436
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<211> 261
<212> PRT
<213> Homo sapiens

<400> 4436
Xaa Ala Arg Asp Glu Val Arg Asn Val Phe Arg Glu Leu Gln Ile Met
1   5   10   15
Gln Gly Leu Glu His Pro Phe Val Val Asn Leu Trp Tyr Ser Phe Gln
            20   25   30
Asp Glu Glu Asp Met Phe Met Val Val Asp Leu Leu Leu Gly Gly Asp
        35   40   45
Leu Arg Tyr His Leu Gln Gln Asn Val His Phe Thr Glu Gly Thr Val
    50   55   60
Lys Leu Tyr Ile Cys Glu Leu Ala Leu Ala Leu Glu Tyr Leu Gln Arg
65   70   75   80
Tyr His Ile Ile His Arg Asp Ile Lys Pro Asp Asn Ile Leu Leu Asp
                85   90   95
Glu His Gly His Val His Ile Thr Asp Phe Asn Ile Ala Thr Val Val
            100   105   110
Lys Gly Ala Glu Arg Ala Ser Ser Met Ala Gly Thr Lys Pro Tyr Met
        115   120   125
Ala Pro Glu Val Phe Gln Val Tyr Met Asp Arg Gly Pro Gly Tyr Ser
        130   135   140
Tyr Pro Val Asp Trp Trp Ser Leu Gly Ile Thr Ala Tyr Glu Leu Leu
145   150   155   160
Arg Gly Trp Arg Pro Tyr Glu Ile His Ser Val Thr Pro Ile Asp Glu
                165   170   175
Ile Leu Asn Met Phe Lys Val Glu Arg Val His Tyr Ser Ser Thr Trp
            180   185   190
Cys Lys Gly Met Val Ala Leu Leu Arg Lys Leu Leu Thr Lys Asp Pro
        195   200   205
Glu Ser Arg Val Ser Ser Leu His Asp Ile Gln Ser Val Pro Tyr Leu
        210   215   220
Ala Asp Met Asn Trp Asp Ala Val Phe Lys Lys Ala Leu Met Pro Gly
225   230   235   240
Phe Val Pro Asn Lys Gly Arg Leu Asn Cys Asp Pro Thr Phe Glu Leu
                245   250   255
Glu Glu Met Ile Leu
            260

<210> 4437
<211> 620
<212> DNA
<213> Homo sapiens

<400> 4437
nnctgcaggg tgtacgtggt ggggacagcc cacttcagcg acgacagcaa gagggacgtt
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gtgaagacca tccgggaggt gcagcctgac gtggtggtcg tggagctctg ccaatatcgt
120
gtgtccatgc tgaagatgga cgagagcacg ctgctgcggg aggcccagga gctcagcctg
180
gagaagctgc agcaggccgt gaggcagaac gggctcatgt cggggctgat gcagatgctg
240

ctgctgaagg tgtctgcaca catcaccgag cagctgggca tggccccagg tggcgagttc
300
agggaggcct tcaaggaggc cagcaaggtg cctttctgca agttccacct gggtgaccga
360
cccatccccg tcaccttcaa gagggccatc gcagcgctct ccttctggca gaaggtcagg
420
ctggcttggg gcctgtgctt cctgtcagac cccatcagca aggatgacgt ggaacgctgc
480
aagcagaagg acctactgga gcagatgatg gccgagatga ttggcgagtt cccagacctg
540
caccgcacca tcgtctcgga gcgcgacgtc tacctaacct acatgctgcg ccaggccgcg
600
cggcgcctcg agctgcctcg
620

<210> 4438
<211> 206
<212> PRT
<213> Homo sapiens

<400> 4438
Xaa Cys Arg Val Tyr Val Val Gly Thr Ala His Phe Ser Asp Asp Ser
1   5   10   15
Lys Arg Asp Val Val Lys Thr Ile Arg Glu Val Gln Pro Asp Val Val
            20   25   30
Val Val Glu Leu Cys Gln Tyr Arg Val Ser Met Leu Lys Met Asp Glu
        35   40   45
Ser Thr Leu Leu Arg Glu Ala Gln Glu Leu Ser Leu Glu Lys Leu Gln
        50   55   60
Gln Ala Val Arg Gln Asn Gly Leu Met Ser Gly Leu Met Gln Met Leu
65   70   75   80
Leu Leu Lys Val Ser Ala His Ile Thr Glu Gln Leu Gly Met Ala Pro
                85   90   95
Gly Gly Glu Phe Arg Glu Ala Phe Lys Glu Ala Ser Lys Val Pro Phe
            100   105   110
Cys Lys Phe His Leu Gly Asp Arg Pro Ile Pro Val Thr Phe Lys Arg
        115   120   125
Ala Ile Ala Ala Leu Ser Phe Trp Gln Lys Val Arg Leu Ala Trp Gly
        130   135   140
Leu Cys Phe Leu Ser Asp Pro Ile Ser Lys Asp Asp Val Glu Arg Cys
145   150   155   160
Lys Gln Lys Asp Leu Leu Glu Gln Met Met Ala Glu Met Ile Gly Glu
                165   170   175
Phe Pro Asp Leu His Arg Thr Ile Val Ser Glu Arg Asp Val Tyr Leu
                180   185   190
Thr Tyr Met Leu Arg Gln Ala Ala Arg Arg Leu Glu Leu Pro
            195   200   205

<210> 4439
<211> 2121
<212> DNA
<213> Homo sapiens

<400> 4439

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nttttttttt ttgaacttct atatctatat tttatatttt aagattggga cagagaaact
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120
tctaaaatta acttttattg ttagagacac atctttagaa aagtttgtaa atatcaacat
180
ttaccatctt attttttcct ttgagaccaa gcatcacaga ccaaaagcca caaagtttac
240
aataatttat tattgttgca tgacatttgc cagtaaaata aattatagaa actatagagt
300
ctttataaac tattttgtat atcatattca cttcctaatg cttactgcag taactgtatg
360
aaatttaatt agattacgtt ttagcattag tcagaagatt taaaaaatat gtaaatgtt
420
ttcacagtac tttggattta taaaagaccc cattatttta acttttgtgc aacctgtttg
480
aaatgtataa aaaacctttt acaaaccaaa aggtggcgta aggttttact gagttgctga
540
agacatctta ctttcttgaa tttctactta acatccatgt ggtgcacttt ttcaggcatt
600
gtaataagtg caaataaata atcaattatt gatttctaaa aatctatacc aatagacaat
660
actcaggctt ggaaatattt tgaacactca gatataaaaa ttcagtaaac aatttatgca
720
tggtattttc tctccctgtc ctccctctcc ctcctccctt ccctatctta tttggttaaa
780
aaaaaaaag ttcaacttcg atttaagtcc tagggcctga caaagtgacc ctggataaat
840
gtcatctcca gccatctgtt ttctttagtt ctcattacat ctgtccaggc tcttctatca
900
gcatcaatcc tttcctgcag ggacggaaga gttttcaaat ccttgctgaa agcatttgt
960
tctcctctgt aacagcacag ggcatgaaat tgtttggagt ctttgtaacc agtctgttca
1020
gtcctggtcc ctttccagtc ccggtccctt tccagcctct ggagtcctga cagaagagaa
1080
gcttgtaagg tagcagcaaa atgctgcatc tgttagaatc tcacaaactc acttggtctt
1140
tgaatgtcca ttcttggata acgtccttat ccatcctctt ctcttcagtg aactttgatg
1200
gaatatttcc gcagtttcag aaactggaaa agcttgtctt ttgtcctctt cttcaaggcc
1260
atcagggcac gcgttttctc ctccacatct tgatctatgg caaaaatgat cttggctctc
1320
tcctctgctt tcttgtctcc agagtttctg aagagccttt ctagtgattc ttggtctgtg
1380
ttttcaaaga tgttgcccac ggctttctta cgagaggctg tgtcgaagtg gtagccatgg
1440
atggatgggc tgactcgtag cgacgtggac atgatgatgg cttggtggct tcgctttgct
1500
ttcatcgatg tggggatctt ccggaattca gctcccaggc tttccatgat tggagctgat
1560
tcatctgaag agaaattttt gcgtagaatt ggaagattcg gttatgggta tggcccttat
1620
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cagccagttc cagaacaacc actataccca caaccatacc aaccacaata ccaacaatat
1680
accttttaat atcatcagta actgcaggac atgattatgg aggtttgact ggcaaatacg
1740
acttctacat ccatattctc atctttcata ccatatcaca ctactaccac tttttgaaga
1800
attatcataa ggcaatgcag aataaaagaa ataccatgat ttactgtata ctctttgttt
1860
caggatactt cccttcctaa ttatcatttg attagatact tgcaatttaa actgttaagc
1920
tgtgttcact gctgtttctg aataatagaa attcattcct ctccaaaagc aataaatttc
1980
aagcacattt tccaatacct gtggcatcac actactacca ctttttgaag aatcatcaaa
2040
gggcaatgca aatgaaaaac attataattt actgtatact ctttgtttca ggatacttgc
2100
cttttcaatt gtcacttgat g
2121


<210> 4440
<211> 82
<212> PRT
<213> Homo sapiens


<400> 4440
Met Asp Gly Leu Thr Arg Ser Asp Val Asp Met Met Met Ala Trp Trp
1               5                   10                  15
Leu Arg Phe Ala Phe Ile Asp Val Gly Ile Phe Arg Asn Ser Ala Pro
            20                  25                  30
Arg Leu Ser Met Ile Gly Ala Asp Ser Ser Glu Glu Lys Phe Leu Arg
        35                  40                  45
Arg Ile Gly Arg Phe Gly Tyr Gly Tyr Gly Pro Tyr Gln Pro Val Pro
    50                  55                  60
Glu Gln Pro Leu Tyr Pro Gln Pro Tyr Gln Pro Gln Tyr Gln Gln Tyr
65                  70                  75                  80
Thr Phe


<210> 4441
<211> 2055
<212> DNA
<213> Homo sapiens


<400> 4441
ntaggaaggg gaggggaagg ggaaggcgag aaggggagag gcaggggaaa gaggggaaga
60
gtcgtgggag ctgggagagg agggaaagag gggaagagtc gtgggagctg gcagaggagg
120
gaaaggggga gccgaacgtg aagggcgaag ggcggggcgg ggcaggagag tcggggtata
180
gagcaggcag gtgttaatgg catgggaagg aagagtaaga agtggggcaa gaaggtgtcg
240
cggtacgagg ggaaggtgag actcaagaag gtgccggcta agaagctggt gccggcgtgg
300
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aaggagaagg tgctgtgggc cctgctggca gtgctcctgg cgtcgtggag gctgtgggcg
360
atcaaggatt tccaggaatg cacctggcag gttgtcctga acgagtttaa gagggtaggc
420
gagagtggtg tgagcgacag cttctttgag caagagcccg tggacacagt gagcagcttg
480
tttcacatgc tggtggactc acccatcgac ccgagcgaga aatacctggg cttcccttac
540
tacctgaaga tcaactactc ctgcgaggaa aagccctctg aggacctggt gcgcatgggc
600
cacctgacgg ggctaaagcc cctggtgctg gtcaccttcc agtccccagt caacttctac
660
cgctggaaga tagagcagct gcagatccag atggaggctg ccccccttccg cagcaaaggt
720
gggcctgggg gaggcgggag ggatcgcaac ctggcaggga tgaatatcaa cggcttcctg
780
aagagagacc gggacaataa catccaattc actgtgggag aggagctctt caacctgatg
840
ccccagtact ttgtgggtgt ctcatcgagg cccttgtggc acactgtgga ccagtcacct
900
gtgcttatcc tgggaggcat tcccaatgag aagtacgtcc tgatgactga caccagcttc
960
aaggacttct ctctcgtgga ggtgaacggt gtggggcaga tgctgagcat tgacagttgc
1020
tgggtgggct ccttctactg cccccattct ggcttcacag ccaccatcta tgacactatt
1080
gccaccgaga gcaccctctt cattcggcag aaccagctgg tctactattt tacaggcacc
1140
tataccacac tctatgagag aaaccgcggc agtggtgagt gtgctgtggc tggacccacg
1200
cctggggagg gcaccctggt gaacccctcc actgaaggca gttggattcg tgtcctggcc
1260
agcgagtgca tcaagaagct gtgccctgtg tatttccata gcaatggctc tgagtacata
1320
atggccctca ccacgggcaa gcatgagggt tatgtacact tcgggaccat cagagttacc
1380
acctgctcca taatttggtc tgaatacatc gcgggtgagt atactctact gctgctggtg
1440
gagagtggat atggtaatgc aagtaaacgt ttccaggtgg tcagctacaa cacagctagt
1500
gatgacctgg aacttctcta ccacatccca gaattcatcc ctgaagctcg aggattggag
1560
ttcctgatga tcctagggac agagtcctac accagcactg caatggcccc caagggcatc
1620
ttctgtaacc cgtacaacaa tctgatcttc atctggggca acttcctcct gcagagatct
1680
ggtacctcct ggagggcagc taccgggtct accagctgtt cccttccaag ggctggcagg
1740
tgcacatcag cttaaagctg atgcaacagt cctctctcta cgcatccaat gagaccatgc
1800
tgaccctctt ctacgaagac agcaaactgt accaggtgcc cggtggagct atgcggggac
1860
atcggggcac cccaggaggg ctgaccccag ctcacctggc cctgccttcc ccctgcagct
1920

ggtgtacctt atgaacaacc agaagggcca gctggtcaag aggctcgtgc ccgtggagca
1980
gcttctgatg tatcaacagc acaccagcca ctatgacttg gagcggaaag ggtgagaaga
2040
caccggacca tgaca
2055

<210> 4442
<211> 517
<212> PRT
<213> Homo sapiens

<400> 4442
Met Gly Arg Lys Ser Lys Lys Trp Gly Lys Lys Val Ser Arg Tyr Glu
 1   5   10   15
Gly Lys Val Arg Leu Lys Lys Val Pro Ala Lys Lys Leu Val Pro Ala
            20   25   30
Trp Lys Glu Lys Val Leu Trp Ala Leu Leu Ala Val Leu Leu Ala Ser
            35   40   45
Trp Arg Leu Trp Ala Ile Lys Asp Phe Gln Glu Cys Thr Trp Gln Val
        50   55   60
Val Leu Asn Glu Phe Lys Arg Val Gly Glu Ser Gly Val Ser Asp Ser
 65   70   75   80
Phe Phe Glu Gln Glu Pro Val Asp Thr Val Ser Ser Leu Phe His Met
                85   90   95
Leu Val Asp Ser Pro Ile Asp Pro Ser Glu Lys Tyr Leu Gly Phe Pro
            100   105   110
Tyr Tyr Leu Lys Ile Asn Tyr Ser Cys Glu Glu Lys Pro Ser Glu Asp
            115   120   125
Leu Val Arg Met Gly His Leu Thr Gly Leu Lys Pro Leu Val Leu Val
        130   135   140
Thr Phe Gln Ser Pro Val Asn Phe Tyr Arg Trp Lys Ile Glu Gln Leu
145   150   155   160
Gln Ile Gln Met Glu Ala Ala Pro Phe Arg Ser Lys Gly Gly Pro Gly
                165   170   175
Gly Gly Gly Arg Asp Arg Asn Leu Ala Gly Met Asn Ile Asn Gly Phe
            180   185   190
Leu Lys Arg Asp Arg Asp Asn Asn Ile Gln Phe Thr Val Gly Glu Glu
        195   200   205
Leu Phe Asn Leu Met Pro Gln Tyr Phe Val Gly Val Ser Ser Arg Pro
    210   215   220
Leu Trp His Thr Val Asp Gln Ser Pro Val Leu Ile Leu Gly Gly Ile
225   230   235   240
Pro Asn Glu Lys Tyr Val Leu Met Thr Asp Thr Ser Phe Lys Asp Phe
                245   250   255
Ser Leu Val Glu Val Asn Gly Val Gly Gln Met Leu Ser Ile Asp Ser
            260   265   270
Cys Trp Val Gly Ser Phe Tyr Cys Pro His Ser Gly Phe Thr Ala Thr
        275   280   285
Ile Tyr Asp Thr Ile Ala Thr Glu Ser Thr Leu Phe Ile Arg Gln Asn
    290   295   300
Gln Leu Val Tyr Tyr Phe Thr Gly Thr Tyr Thr Thr Leu Tyr Glu Arg
305   310   315   320
Asn Arg Gly Ser Gly Glu Cys Ala Val Ala Gly Pro Thr Pro Gly Glu

```
                    325                      330                      335
Gly Thr Leu Val Asn Pro Ser Thr Glu Gly Ser Trp Ile Arg Val Leu
            340                      345                  350
Ala Ser Glu Cys Ile Lys Lys Leu Cys Pro Val Tyr Phe His Ser Asn
            355                  360                  365
Gly Ser Glu Tyr Ile Met Ala Leu Thr Thr Gly Lys His Glu Gly Tyr
        370                  375                  380
Val His Phe Gly Thr Ile Arg Val Thr Thr Cys Ser Ile Ile Trp Ser
385                      390                  395                  400
Glu Tyr Ile Ala Gly Glu Tyr Thr Leu Leu Leu Leu Val Glu Ser Gly
                405                      410                  415
Tyr Gly Asn Ala Ser Lys Arg Phe Gln Val Val Ser Tyr Asn Thr Ala
                420                  425                  430
Ser Asp Asp Leu Glu Leu Leu Tyr His Ile Pro Glu Phe Ile Pro Glu
            435                  440                  445
Ala Arg Gly Leu Glu Phe Leu Met Ile Leu Gly Thr Glu Ser Tyr Thr
        450                  455                  460
Ser Thr Ala Met Ala Pro Lys Gly Ile Phe Cys Asn Pro Tyr Asn Asn
465                  470                      475                  480
Leu Ile Phe Ile Trp Gly Asn Phe Leu Leu Gln Arg Ser Gly Thr Ser
                485                      490                  495
Trp Arg Ala Ala Thr Gly Ser Thr Ser Cys Ser Leu Pro Arg Ala Gly
                500                      505                  510
Arg Cys Thr Ser Ala
            515
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<210> 4443
<211> 692
<212> DNA
<213> Homo sapiens

<400> 4443
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ccagggtaag gtctgggccc ctgctgctga catcccccac atgtcagtct gcctgctagt
120
gggattgact aactcatcaa cgtggagttt aatgcccaac caagtgcaga ccacgctcct
180
gttttgcgtc accctctgcg aagcttcctg caaacttgac tccctgccca gtgcccccag
240
ccccaaggct ggtctccagg aggtaaggcc cgccctgcag gcaacaccgg tgcttgggct
300
cctgctgagc agttctttcc tgcgagtaac agaaccaggg agggaggtgg gctgtggcct
360
cccctgcccc tacagtcatc tcctgcagct cccaccatgc tggactcatc agcagcagag
420
caagtgaccc gactgacgct gaagctcttg ggacagaagc tggagcaaga acggcagaac
480
gtggaagggg gacctgaggg ctccacctcg agccaggaaa tgaggaccgg ccggacgatg
540
ccctgcagac tgctctgaag agaaggaggg accttctgca gagactccgg gaacaacacc
600
tcctggacga gctctctcgg gcccaggcct ggagcgggcc aagcagagga gccctcgagt
660
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3633

cagccctgcc cccagagctg ccccccacgc gt
692

<210> 4444
<211> 108
<212> PRT
<213> Homo sapiens

<400> 4444
Met Ser Val Cys Leu Leu Val Gly Leu Thr Asn Ser Ser Thr Trp Ser
1   5   10   15
Leu Met Pro Asn Gln Val Gln Thr Thr Leu Leu Phe Cys Val Thr Leu
            20   25   30
Cys Glu Ala Ser Cys Lys Leu Asp Ser Leu Pro Ser Ala Pro Ser Pro
        35   40   45
Lys Ala Gly Leu Gln Glu Val Arg Pro Ala Leu Gln Ala Thr Pro Val
    50   55   60
Leu Gly Leu Leu Leu Ser Ser Ser Phe Leu Arg Val Thr Glu Pro Gly
65   70   75   80
Arg Glu Val Gly Cys Gly Leu Pro Cys Pro Tyr Ser His Leu Leu Gln
                85   90   95
Leu Pro Pro Cys Trp Thr His Gln Gln Gln Ser Lys
                100   105

<210> 4445
<211> 901
<212> DNA
<213> Homo sapiens

<400> 4445
ggatccactg cctctgtgcc tgcctgtact gccgatgctc cagtggataa ctcagcatcc
60
cagccaaggc ccaatgccac tgaagatgga cctgccccct ggggacccag gagtcctacc
120
actcagctgt ccccaggagt gcccagaccc tcattcttat ccaggaccta ggagccctac
180
ccctggcctt ccctcatcag ccgtaaatga tgatttactg ctgttaccat catcactgcc
240
ttcagtgacc aagggccttc caaggtgcca gctctggaac gaaggatgcc cttgggaggt
300
gatgatactc aggtacacgg gtgctcaaca gattgcttcc tcctatcctc agacggtctt
360
tgcatgcatg cagccattgg cactcccatt gtgtggaagg aaaccagccc agggtcacac
420
agctggtcag cagcaacata gctggtctca aatctaaggt gcctgaccat gcctccatga
480
gggaccgcct ccaagggagg ttgatcctgg ctttggggag cctttcctgg ctgcacgaa
540
taacctccat tgttcgagac cccaaactct gctcacatct tcctttccct gtctctgctt
600
gggctatgat cacggtgact ctagcaaccc ttcatggaca ttataatact ctctgccatt
660
cacttttggt ctaatctgac ttcaaccccc acttacttgg tctctccttt tacaaccaac
720

                                    3634

atggcaaaac cccatctcca caaaaattgg ataatttgat aattatcatt attgggtttc
780
tgagacgtta cacatttaac attctcttct gcacaagttg cctttgtgtg agtatactaa
840
ctttctgtag aggtatactt gtaatcacaa ataagaataa attatataaa acaaaaaaaa
900
a
901

<210> 4446
<211> 140
<212> PRT
<213> Homo sapiens

<400> 4446
Met Leu Gln Trp Ile Thr Gln His Pro Ser Gln Gly Pro Met Pro Leu
1   5   10   15
Lys Met Asp Leu Pro Pro Gly Asp Pro Gly Val Leu Pro Leu Ser Cys
            20   25   30
Pro Gln Glu Cys Pro Asp Pro His Ser Tyr Pro Gly Pro Arg Ser Pro
        35   40   45
Thr Pro Gly Leu Pro Ser Ser Ala Val Asn Asp Asp Leu Leu Leu Leu
    50   55   60
Pro Ser Ser Leu Pro Ser Val Thr Lys Gly Leu Pro Arg Cys Gln Leu
65   70   75   80
Trp Asn Glu Gly Cys Pro Trp Glu Val Met Ile Leu Arg Tyr Thr Gly
                85   90   95
Ala Gln Gln Ile Ala Ser Ser Tyr Pro Gln Thr Val Phe Ala Cys Met
                100   105   110
Gln Pro Leu Ala Leu Pro Leu Cys Gly Arg Lys Pro Ala Gln Gly His
        115   120   125
Thr Ala Gly Gln Gln Gln His Ser Trp Ser Gln Ile
    130   135   140

<210> 4447
<211> 951
<212> DNA
<213> Homo sapiens

<400> 4447
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60
agccaggccc cagacaccgc actcagggcc atggccgaca ggggcccgtg gagggtgggg
120
gtggtgggct atggccgcct cggacagtcc cttgtgtccc gccttctggc tcagggatca
180
gaactgggcc tagaacttgt ttttgtgtgg aaccgtgacc ctggacgaat ggcagggagt
240
gtgccccctg ccctgcagct cgaagacctc actacacttg aggaaaggca ccctgacctt
300
gtggtagaag tggcccatcc aaaaataatc catgaatctg gggtacaaat cctccgtcat
360
gcaaaccttc tgagccttcg tgtcaccatg gccacacacc ccgatggctt ccggcttgag
420

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ggacccctgg ctgcagccca cagccctggg ccttgcactg tgctctacga aggccctgtc
480
cgtgggctct gccccttttgc cccgcgaaat tccaacacca tggcggcggc tgccctggct
540
gcccccagcc tgggcttcga tggggtgatt ggggtgctcg tggctgatac cagcctcacg
600
gacatgcacg tggtggatgt agagctgagc ggaccccggg gccccacggg ccgaagcttt
660
gctgtgcaca cccgcagaga gaaccctgcc gagccaggcg cggtcaccgg ctccgccacc
720
gtcacggcct tctggcggag cctcctggcc tgctgccagc tcccctccag gccggggatc
780
catctctgct gagaagcctc ctccctcccg agacaagatc atctgcctgg cctctcacca
840
ccaccatccc acccctgccc tgccccactt ccccagggtc tcccttctga ctcagtaaag
900
atcaccgctg cctcccccccg caaaaaaaaa aaaaaaaaaa aaaaaaaaa a
951
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<210> 4448
<211> 263
<212> PRT
<213> Homo sapiens
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<400> 4448
Arg Cys Pro Lys Ser Ser Gly Cys Pro Gly Leu Val Gln Arg Ala Ala
 1               5                  10                  15
Ser Ser Pro Gly Ser Gln Ala Pro Asp Thr Ala Leu Arg Ala Met Ala
            20                  25                  30
Asp Arg Gly Pro Trp Arg Val Gly Val Val Gly Tyr Gly Arg Leu Gly
        35                  40                  45
Gln Ser Leu Val Ser Arg Leu Leu Ala Gln Gly Ser Glu Leu Gly Leu
    50                  55                  60
Glu Leu Val Phe Val Trp Asn Arg Asp Pro Gly Arg Met Ala Gly Ser
65                  70                  75                  80
Val Pro Pro Ala Leu Gln Leu Glu Asp Leu Thr Thr Leu Glu Glu Arg
                85                  90                  95
His Pro Asp Leu Val Val Glu Val Ala His Pro Lys Ile Ile His Glu
            100                 105                 110
Ser Gly Val Gln Ile Leu Arg His Ala Asn Leu Leu Ser Leu Arg Val
        115                 120                 125
Thr Met Ala Thr His Pro Asp Gly Phe Arg Leu Glu Gly Pro Leu Ala
    130                 135                 140
Ala Ala His Ser Pro Gly Pro Cys Thr Val Leu Tyr Glu Gly Pro Val
145                 150                 155                 160
Arg Gly Leu Cys Pro Phe Ala Pro Arg Asn Ser Asn Thr Met Ala Ala
                165                 170                 175
Ala Ala Leu Ala Ala Pro Ser Leu Gly Phe Asp Gly Val Ile Gly Val
                180                 185                 190
Leu Val Ala Asp Thr Ser Leu Thr Asp Met His Val Val Asp Val Glu
            195                 200                 205
Leu Ser Gly Pro Arg Gly Pro Thr Gly Arg Ser Phe Ala Val His Thr
    210                 215                 220
Arg Arg Glu Asn Pro Ala Glu Pro Gly Ala Val Thr Gly Ser Ala Thr
```

```
      225                   230                   235                   240
      Val Thr Ala Phe Trp Arg Ser Leu Leu Ala Cys Cys Gln Leu Pro Ser
                           245                   250                   255
      Arg Pro Gly Ile His Leu Cys
                           260
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<210> 4449
<211> 1365
<212> DNA
<213> Homo sapiens

<400> 4449
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ttctcgatgg aggacaaaac ctccaactgt agaagttcta gaaagtatag ataaggaaat
120
tcaagcattg gaagaattta gggaaaaaaa tcagagatta caaaaattat gggttggaag
180
attaattctg tattcctcag ttctctatct gtttacatgc ttaattgtat atttgtggta
240
tcttcctgat gaatttacag caagacttgc catgacactc ccattttttg cttttccatt
300
gatcatctgg agcataagaa cagtaattat tttcttcttt tccaagagaa cagaaagaaa
360
taatgaagca ttggatgatt taaaatccca gaggaaaaaa atacttgaag aagtcatgga
420
aaaagaaact tacaagacgg ctaaattaat tcttgaaagg tttgatccgt actcaaagaa
480
agcaaaggag tgtgagccgc catctgctgg agcagctgta actgcaagac ctggacaaga
540
gattcgtcag cgaactgcag ctcaaagaaa cctttctcaa caccagcaag ccctaaccag
600
ggccctcctc cacaagttcc agtatctcct ggaccaccaa aggacagttc tgcccctggt
660
ggacccccag aaaggactgt tactccagcc ctatcatcaa atgtgttacc aagacatctt
720
ggatcccctg ctacttcagt gcctggaatg ggtcttcatc ctccaggtcc acctttagca
780
agacctattc tcccccgaga acgaggtgct ttggatagaa ttgttgaata tttggttggt
840
gatggtccac aaaacaggta tgcacttata tgtcagcagt gtttttctca taatggcatg
900
gctttgaagg aagaatttga atacattgct tttcgatgtg cctactgttt tttcttgaac
960
cctgcaagaa aaaccagacc tcaggctcca agacttcctg agtttagttt tgagaagagg
1020
caggtggtgg aaggttcaag ttcagttggt cccttgccat caggaagtgt gctttcatca
1080
gacaaccagt ttaatgaaga atctttagaa cacgatgttc ttgatgataa tacagagcag
1140
acagatgaca aaataccagc tacagaacag acaaaccaag tgattgaaaa agcatctgac
1200
tcagaggaac cagaggagaa acaagagact gagaatgagg aagcctcagt gattgaaacc
1260
```

aactccacag ttcctggagc tgattctatt cctgatcctg aactaagtgg agaatctttg
1320
acggcagagt agtaaatgct tccacgtgcc ttcaactgga aaaaa
1365

<210> 4450
<211> 194
<212> PRT
<213> Homo sapiens

<400> 4450
Met Gly Leu His Pro Pro Gly Pro Pro Leu Ala Arg Pro Ile Leu Pro
 1   5   10   15
Arg Glu Arg Gly Ala Leu Asp Arg Ile Val Glu Tyr Leu Val Gly Asp
            20   25   30
Gly Pro Gln Asn Arg Tyr Ala Leu Ile Cys Gln Gln Cys Phe Ser His
            35   40   45
Asn Gly Met Ala Leu Lys Glu Glu Phe Glu Tyr Ile Ala Phe Arg Cys
        50   55   60
Ala Tyr Cys Phe Phe Leu Asn Pro Ala Arg Lys Thr Arg Pro Gln Ala
65   70   75   80
Pro Arg Leu Pro Glu Phe Ser Phe Glu Lys Arg Gln Val Val Glu Gly
                85   90   95
Ser Ser Ser Val Gly Pro Leu Pro Ser Gly Ser Val Leu Ser Ser Asp
            100   105   110
Asn Gln Phe Asn Glu Glu Ser Leu Glu His Asp Val Leu Asp Asp Asn
            115   120   125
Thr Glu Gln Thr Asp Asp Lys Ile Pro Ala Thr Glu Gln Thr Asn Gln
130   135   140
Val Ile Glu Lys Ala Ser Asp Ser Glu Glu Pro Glu Glu Lys Gln Glu
145   150   155   160
Thr Glu Asn Glu Glu Ala Ser Val Ile Glu Thr Asn Ser Thr Val Pro
                165   170   175
Gly Ala Asp Ser Ile Pro Asp Pro Glu Leu Ser Gly Glu Ser Leu Thr
            180   185   190
Ala Glu

<210> 4451
<211> 1637
<212> DNA
<213> Homo sapiens

<400> 4451
nntcctggag gacccaggac tgaccaagtc cccggcctca gcaggcgatc atgttggcag
60
gcttggatct tctcgctctg tgaccagcct gggccacaca ctggtggaat ctgctctcac
120
gaggccttcc ctgcccagtc cccacaggac ctcacctagg gtggaggaga gcaacagcaa
180
gctcctggag tcagagagga agctgcagga ggagcgacac cgcaccgtgg tcttggagca
240
acatctggag aagatacgcc tggagccagg gaaggcatca gcctcccaga gagcagctcc
300

3638

caggaccaaa acagctccgc tcctggatgt atgctgtgta cggggccttg gctgtgatgg
360
gcacaatggg cccttggtac ctgctgctgc tgcttggtca ctgtgtgggc ctctatgtgg
420
cctcgctttt gggccagccc tggctctgtc ttggccttgg cttggccagc ctggcctcct
480
tcaagatgga ccccctaatc tcttggcaga gcgggtttgt aacaggcact tttgatcttc
540
aagaggtgct gtttcatggg ggcagcagct tcacagtgct gcgttgcacc agctttgcac
600
tggagagctg tgcccaccct gaccgccact nactccttag ctgacctgct caagtacaac
660
ttctacctgc ccttcttctt cttcgggccc atcatgacct ttgatcgctt ccatgctcag
720
gtgagccagg tggagccagt gagacgcgag ggtgagctgt ggcacatccg agcccaggca
780
ggcctaagcg tggtggccat catggccgtc gacatcttct ttcacttctt ctacatcctc
840
actatcccca gcgacctcaa gttcgccaac cgcctcccag acagtgccct cgctggccta
900
gcctattcaa acctggtgta tgactgggtg aaggcggccg tcctctttgg tgttgtcaac
960
actgtggcat gcctcgacca cctggaccca ccccagcctc ccaagtgcat caccgcactc
1020
tacgtctttg cggaaacgca ctttgaccgt ggcatcaacg actggctttg caaatatgtg
1080
tataaccaca ttggtggggga gcattccgct gtgatcccag agctggcagc cacagtggcc
1140
acatttgcca tcaccacact gtggcttggg ccttgtgaca ttgtctacct gtggtcattc
1200
cttaactgct ttggcctcaa ctttgagctc tggatgcaaa aactggcaga gtggggggccc
1260
ctagcacgaa ttgaggcctc tctgtcagtg cagatgtccc gtagggtccg ggccctgttt
1320
ggagccatga acttctgggc catcatcatg tacaaccttg tgagcctgaa cagcctcaaa
1380
ttcacagagc tggttgcccg gcgcctgcta ctcacagggt tcccccagac cacgctgtcc
1440
atcctgtttg tcacctactg tggcgtccag ctggtaaagg agcgtgagcg aaccttggca
1500
ctggaggagg agcagaagca ggacaaagag aagccggagt aggagggagc gggtagaggg
1560
atgggctctg ctcagctatt cttgggccag atggggcctg accgatagaa taaaagactt
1620
ttctacaaca aaaaaaa
1637

<210> 4452
<211> 328
<212> PRT
<213> Homo sapiens

<400> 4452
Met Gly Ala Ala Ala Ser Gln Cys Cys Val Ala Pro Ala Leu His Trp

```
 1                  5                        10                      15
Arg Ala Val Pro Thr Leu Thr Ala Thr Xaa Ser Leu Ala Asp Leu Leu
                20                        25                  30
Lys Tyr Asn Phe Tyr Leu Pro Phe Phe Phe Gly Pro Ile Met Thr
                35                        40                  45
Phe Asp Arg Phe His Ala Gln Val Ser Gln Val Glu Pro Val Arg Arg
     50                        55                        60
Glu Gly Glu Leu Trp His Ile Arg Ala Gln Ala Gly Leu Ser Val Val
65                       70                        75                  80
Ala Ile Met Ala Val Asp Ile Phe Phe His Phe Phe Tyr Ile Leu Thr
                85                        90                        95
Ile Pro Ser Asp Leu Lys Phe Ala Asn Arg Leu Pro Asp Ser Ala Leu
                100                      105                      110
Ala Gly Leu Ala Tyr Ser Asn Leu Val Tyr Asp Trp Val Lys Ala Ala
                115                      120                      125
Val Leu Phe Gly Val Val Asn Thr Val Ala Cys Leu Asp His Leu Asp
                130                      135                      140
Pro Pro Gln Pro Pro Lys Cys Ile Thr Ala Leu Tyr Val Phe Ala Glu
145                      150                      155                      160
Thr His Phe Asp Arg Gly Ile Asn Asp Trp Leu Cys Lys Tyr Val Tyr
                165                      170                      175
Asn His Ile Gly Gly Glu His Ser Ala Val Ile Pro Glu Leu Ala Ala
                180                      185                      190
Thr Val Ala Thr Phe Ala Ile Thr Thr Leu Trp Leu Gly Pro Cys Asp
                195                      200                      205
Ile Val Tyr Leu Trp Ser Phe Leu Asn Cys Phe Gly Leu Asn Phe Glu
                210                      215                      220
Leu Trp Met Gln Lys Leu Ala Glu Trp Gly Pro Leu Ala Arg Ile Glu
225                      230                      235                      240
Ala Ser Leu Ser Val Gln Met Ser Arg Arg Val Arg Ala Leu Phe Gly
                245                      250                      255
Ala Met Asn Phe Trp Ala Ile Ile Met Tyr Asn Leu Val Ser Leu Asn
                260                      265                      270
Ser Leu Lys Phe Thr Glu Leu Val Ala Arg Arg Leu Leu Leu Thr Gly
                275                      280                      285
Phe Pro Gln Thr Thr Leu Ser Ile Leu Phe Val Thr Tyr Cys Gly Val
                290                      295                      300
Gln Leu Val Lys Glu Arg Glu Arg Thr Leu Ala Leu Glu Glu Glu Gln
305                      310                      315                      320
Lys Gln Asp Lys Glu Lys Pro Glu
                325
```

<210> 4453
<211> 685
<212> DNA
<213> Homo sapiens

<400> 4453
tttttttttt tttttttttt tttttttttt ttttccagt gtggaaactt actttattcc
60
agccatgatt atcctagttg tcaccttgca cacctgccat ccggtgccat ctcctggctg
120
gcacatctat acccactctg gctctgaaag gcttgtcaac caaaaatggg cagctggggc
180

```
taaggcatat ttaaacaaag gctccaaagg acccctttca cttgggtcta gcatccagcc
240
tctctctcag caaaggcagg attgtggtcc cttgtgtttt ctgaacaggg cccagggcag
300
ccaaggcatg ccatcactgc agcactcaac cctctggtca cagtggagtc gccggtccag
360
cctgaaatat tactacagag gagaaagacc cattcttgct atgttgctct atcttccacg
420
tccaaaaaca gtcctatgta gcttcagctg ctccgaaatc aggtcacaga acagcaggag
480
acattccttt ggcaaaaaag gacacgcttt tgtcctgtat cttatactgg taagtgaagc
540
tctgatcccg gtggactgcg ggctgcgatg gtctcctcca caggatcctc agctacagag
600
acagagaaga atgaaagagg agcagccacc ccaggacctg ctccactggg aaccccaccc
660
taccttctct gtgcccttca cgcgt
685
```

```
<210> 4454
<211> 207
<212> PRT
<213> Homo sapiens

<400> 4454
Met Ile Ile Leu Val Val Thr Leu His Thr Cys His Pro Val Pro Ser
1               5                   10                  15
Pro Gly Trp His Ile Tyr Thr His Ser Gly Ser Glu Arg Leu Val Asn
            20                  25                  30
Gln Lys Trp Ala Ala Gly Ala Lys Ala Tyr Leu Asn Lys Gly Ser Lys
        35                  40                  45
Gly Pro Leu Ser Leu Gly Ser Ser Ile Gln Pro Leu Ser Gln Gln Arg
    50                  55                  60
Gln Asp Cys Gly Pro Leu Cys Phe Leu Asn Arg Ala Gln Gly Ser Gln
65              70                  75                  80
Gly Met Pro Ser Leu Gln His Ser Thr Leu Trp Ser Gln Trp Ser Arg
                85                  90                  95
Arg Ser Ser Leu Lys Tyr Tyr Tyr Arg Gly Glu Arg Pro Ile Leu Ala
                100                 105                 110
Met Leu Leu Tyr Leu Pro Arg Pro Lys Thr Val Leu Cys Ser Phe Ser
            115                 120                 125
Cys Ser Glu Ile Arg Ser Gln Asn Ser Arg Arg His Ser Phe Gly Lys
        130                 135                 140
Lys Gly His Ala Phe Val Leu Tyr Leu Ile Leu Val Ser Glu Ala Leu
145                 150                 155                 160
Ile Pro Val Asp Cys Gly Leu Arg Trp Ser Pro Pro Gln Asp Pro Gln
                165                 170                 175
Leu Gln Arg Gln Arg Arg Met Lys Glu Glu Gln Pro Pro Gln Asp Leu
            180                 185                 190
Leu His Trp Glu Pro His Pro Thr Phe Ser Val Pro Phe Thr Arg
            195                 200                 205

<210> 4455
<211> 882
```

<212> DNA
<213> Homo sapiens

<400> 4455
nacgcgtgcc tcagtaccaa cgggctcggc agcagcccgg gcagtgccgg gcacatgaac
60
ggattaagcc acagcccggg gaacccgtcg accattccca tgaaggacca cgatgccatc
120
aagctgttca ttgggcagat cccccgcaac ctggatgaga aggacctcaa gcccctcttc
180
gaggagtttg gcaaaatcta cgagcttacg gttctgaagg acaggttcac aggcatgcac
240
aaaggctgcg ccttcctcac ctactgcgag cgtgagtcag cgctgaaggc ccagagcgcg
300
ctgcacgagc agaagactct gcccgggatg aaccggccga tccaggtgaa gcctgcggac
360
agcgagagcc gaggagatag tagctgcctg cgccagcccc cttcacatag aaaactcttc
420
gtgggcatgc tcaacaagca acagtccgag gacgacgtgc gccgccttt cgaggccttt
480
gggaacatcg aggagtgcac catcctgcgc gggcccgacg gcaacagcaa ggggtgcgcc
540
tttgtgaagt actcctccca cgccgaggcg caggccgcca tcaacgcgct acacggcagc
600
cagaccatgc cgggagcctc gtccagtctg gtggtcaagt tcgccgacac cgacaaggag
660
cgcacgatgc ggcgaatgca gcagatggct ggccagatgg gcatgttcaa ccccatggcc
720
atccctttcg gggcctacgg cgcctacgct caggcactga tgcagcagca agcggccctg
780
atggcatcag tcgcgcaggg cggctacctg aaccccatgg ctgccttcgc tgccgcccag
840
atgcagcaga tggcggccct caacatgaat ggcctggcgg cc
882

<210> 4456
<211> 261
<212> PRT
<213> Homo sapiens

<400> 4456
Met Lys Asp His Asp Ala Ile Lys Leu Phe Ile Gly Gln Ile Pro Arg
 1   5   10   15
Asn Leu Asp Glu Lys Asp Leu Lys Pro Leu Phe Glu Glu Phe Gly Lys
                20   25   30
Ile Tyr Glu Leu Thr Val Leu Lys Asp Arg Phe Thr Gly Met His Lys
        35   40   45
Gly Cys Ala Phe Leu Thr Tyr Cys Glu Arg Glu Ser Ala Leu Lys Ala
    50   55   60
Gln Ser Ala Leu His Glu Gln Lys Thr Leu Pro Gly Met Asn Arg Pro
65   70   75   80
Ile Gln Val Lys Pro Ala Asp Ser Glu Ser Arg Gly Asp Ser Ser Cys
                85   90   95
Leu Arg Gln Pro Pro Ser His Arg Lys Leu Phe Val Gly Met Leu Asn

```
                    100                     105                      110
      Lys Gln Gln Ser Glu Asp Asp Val Arg Arg Leu Phe Glu Ala Phe Gly
                 115                     120                      125
      Asn Ile Glu Glu Cys Thr Ile Leu Arg Gly Pro Asp Gly Asn Ser Lys
             130                     135                      140
      Gly Cys Ala Phe Val Lys Tyr Ser Ser His Ala Glu Ala Gln Ala Ala
      145                     150                      155                      160
      Ile Asn Ala Leu His Gly Ser Gln Thr Met Pro Gly Ala Ser Ser Ser
                         165                     170                      175
      Leu Val Val Lys Phe Ala Asp Thr Asp Lys Glu Arg Thr Met Arg Arg
                     180                     185                      190
      Met Gln Gln Met Ala Gly Gln Met Gly Met Phe Asn Pro Met Ala Ile
                 195                     200                      205
      Pro Phe Gly Ala Tyr Gly Ala Tyr Ala Gln Ala Leu Met Gln Gln Gln
             210                     215                      220
      Ala Ala Leu Met Ala Ser Val Ala Gln Gly Gly Tyr Leu Asn Pro Met
      225                     230                      235                      240
      Ala Ala Phe Ala Ala Ala Gln Met Gln Gln Met Ala Ala Leu Asn Met
                     245                     250                      255
      Asn Gly Leu Ala Ala
                 260
```

```
<210> 4457
<211> 1491
<212> DNA
<213> Homo sapiens
```

```
<400> 4457
nggctggcag gtgcacatca gcttaaagct gatgcaacag tcctctctct acgcatccaa
60
tgagaccatg ctgaccctct tctacgaaga cagcaaactg taccaggtgc ccggtggagc
120
tatgcgggga catcggggca ccccaggagg gctgacccca gctcacctgg ccctgccttc
180
cccctgcagc tggtgtacct tatgaacaac cagaagggcc agctggtcaa gaggctcgtg
240
cccgtggagc agcttctgat gtatcaacag cacaccagcc actatgactt ggagcggaaa
300
gggggctact tgatgctctc cttcatcgac ttctgcccct tctcggtgat gcgcctgcgg
360
agcctgccca gtccgcagag atacacgcgc caggagcgct accgggcgcg gccgccgcgc
420
gtcctggagc gctcgggctt ccacaacgag aactcgctcg ccatctacca gggcctggtc
480
tactacctgc tgtggctgca ctccgtgtac gacaaggatt actacttctt cttggcgagc
540
aattggcgaa gcgcgggcgg cgtgtccata gaaatggaca gctacgaaaa gatctacaac
600
ctcgagtccg cgtacgagct gccggagcgc attttcctgg acaagggcac tgagtacagc
660
ttcgccatct tcctgtcggc gcagggccac tcgttccgga cgcagtcaga actcggtctg
720
cgcgggacca gagtggagcc cgaagggcgg ggcgagggct accagaatct gggagcctgg
780
```

ggggcggggga caccatcgga ggggcggggc ctgtctgtgg acgtgggcgt ggtgctggcc
840
gaccccggct gcatcgaggc ctcggtgaag caggaggtcc tgattaatcg caactcggtg
900
ctattttcga ttacgctcaa ggataaaaag ctttgctatg accaaggcat tagtggacat
960
caccttatgg agacttccat gacggtcaat gtgaggtcca agcctggagg ggagggcaag
1020
cgcctggcct tcgacatcac ctacacgctg gaatacagcc gcctgaagaa caaacactac
1080
tttgactgcg ttaacgtgaa cccggagatg ccctgctttc tcttccggga cagtgtctat
1140
gttctgctgg tggtgggtgg cgggcccaca ctggacagcc tcaaggacta cagtgaggac
1200
gaaatctacc gcttcaacag cccccctggac aagaccaaca gccttatctg gaccacgagg
1260
accacaagga ccaccaaaga ctcagccttt cacatcatgt cccacgagag cccaggcatc
1320
gagtggctct gtctggagaa tgccccatgc tatgacaatg ttccccaagg catctttgcc
1380
cctgaattct tcttcaaggt gttggtgagc aataggtgag ccaggcaagt ggcccaggtg
1440
cgggtcaggg gctgcccatg gaatgcctgg cttctcctct aatcctggat c
1491

<210> 4458
<211> 405
<212> PRT
<213> Homo sapiens

<400> 4458
Met Asn Asn Gln Lys Gly Gln Leu Val Lys Arg Leu Val Pro Val Glu
1   5   10   15
Gln Leu Leu Met Tyr Gln Gln His Thr Ser His Tyr Asp Leu Glu Arg
                20   25   30
Lys Gly Gly Tyr Leu Met Leu Ser Phe Ile Asp Phe Cys Pro Phe Ser
            35   40   45
Val Met Arg Leu Arg Ser Leu Pro Ser Pro Gln Arg Tyr Thr Arg Gln
        50   55   60
Glu Arg Tyr Arg Ala Arg Pro Pro Arg Val Leu Glu Arg Ser Gly Phe
65   70   75   80
His Asn Glu Asn Ser Leu Ala Ile Tyr Gln Gly Leu Val Tyr Tyr Leu
                85   90   95
Leu Trp Leu His Ser Val Tyr Asp Lys Asp Tyr Tyr Phe Phe Leu Ala
                100   105   110
Ser Asn Trp Arg Ser Ala Gly Gly Val Ser Ile Glu Met Asp Ser Tyr
            115   120   125
Glu Lys Ile Tyr Asn Leu Glu Ser Ala Tyr Glu Leu Pro Glu Arg Ile
        130   135   140
Phe Leu Asp Lys Gly Thr Glu Tyr Ser Phe Ala Ile Phe Leu Ser Ala
145   150   155   160
Gln Gly His Ser Phe Arg Thr Gln Ser Glu Leu Gly Leu Arg Gly Thr
                165   170   175
Arg Val Glu Pro Glu Gly Arg Gly Glu Gly Tyr Gln Asn Leu Gly Ala

3644

```
                    180                     185                    190
Trp Gly Ala Gly Thr Pro Ser Glu Gly Arg Gly Leu Ser Val Asp Val
            195                     200                 205
Gly Val Val Leu Ala Asp Pro Gly Cys Ile Glu Ala Ser Val Lys Gln
        210                     215                 220
Glu Val Leu Ile Asn Arg Asn Ser Val Leu Phe Ser Ile Thr Leu Lys
    225                     230                 235                    240
Asp Lys Lys Leu Cys Tyr Asp Gln Gly Ile Ser Gly His His Leu Met
                245                     250                 255
Glu Thr Ser Met Thr Val Asn Val Arg Ser Lys Pro Gly Gly Glu Gly
            260                     265                 270
Lys Arg Leu Ala Phe Asp Ile Thr Tyr Thr Leu Glu Tyr Ser Arg Leu
        275                     280                 285
Lys Asn Lys His Tyr Phe Asp Cys Val Asn Val Asn Pro Glu Met Pro
    290                     295                 300
Cys Phe Leu Phe Arg Asp Ser Val Tyr Val Leu Leu Val Val Gly Gly
305                     310                 315                    320
Gly Pro Thr Leu Asp Ser Leu Lys Asp Tyr Ser Glu Asp Glu Ile Tyr
                325                     330                 335
Arg Phe Asn Ser Pro Leu Asp Lys Thr Asn Ser Leu Ile Trp Thr Thr
            340                     345                 350
Arg Thr Thr Arg Thr Thr Lys Asp Ser Ala Phe His Ile Met Ser His
        355                     360                 365
Glu Ser Pro Gly Ile Glu Trp Leu Cys Leu Glu Asn Ala Pro Cys Tyr
    370                     375                 380
Asp Asn Val Pro Gln Gly Ile Phe Ala Pro Glu Phe Phe Phe Lys Val
385                     390                 395                    400
Leu Val Ser Asn Arg
                405
```

<210> 4459
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 4459

```
cggggccacg ctgttccaca ggcacgctga gcggcttgaa gacccttccc agctccagag
60
aaggcaacac cgagggaggc ccagcaccac agtccatggc agacacatgg ttcagacttg
120
gccgattgat ctaagaaact ttattgctca gaaccttccc tccctgggca atggaaagag
180
ctttggagac cagcccatgg ggacagagtc agaggcactg ggtgtaaaaa aagagcgagc
240
gtgtggcaca tttggtccat tgtcatgtgt gggtatggca ggaggagggg gtaatctaga
300
agccccacat ctagggcctt ctagggaccc agatatgccc ccttaggcaa ggctcacatg
360
ccaaagcaaa gcagatgagg tcagcctggc ttgggttgag ggctcagtgc ctcttagcct
420
tgccctgggg ttcttggacc ttccggaaac tgagccacat caggctcacg ttgatagcat
480
aggtggtgat acaaacaatg cagaaatcat agagcacgaa gaacaggatc caggccaggt
540
```

```
agacagaacc agcgagagac accagggagc tcagcagcat caggacagag gcccagcgtg
600
tccgcaggca acctaacaat agctgtagtg tgtagaagat gcaaccgaat atgctgttgg
660
attgattgag gatgctgtcc tgtcccagca catgctccac cagcccgaaa cccctgcccc
720
acctggagga gaagacgcgc gaacagctga tggcggtgcc cacgtcgcag agcgcgcggt
780
aatcccggtc ccgggcgcgc gccgccttca cgtgcagcgc gtagagcgag agcactaagc
840
ccgtcaggca aagagcgagc cgcacccagc cagggctccc ccaggtgctg cccattatct
900
ccaggttccg cccgaggcgc ccgcggagaa aaccagccac ggagcagggg ccgggcggcg
960
aatggccgcg cccctcctgg ccctctgact cggcgattgg ccggccgtgc tcgcactcca
1020
cgacccaaat ggctgttcca gggcgctagt caagcgggcg agttaggaaa acagcgaaga
1080
atgccgggac tagtgaagcg ggtaagggac gtgc
1114
```

```
<210> 4460
<211> 121
<212> PRT
<213> Homo sapiens
```

```
<400> 4460
Trp Arg Cys Pro Arg Arg Arg Ala Arg Gly Asn Pro Gly Pro Gly Arg
1               5                   10                  15
Ala Pro Pro Ser Arg Ala Ala Arg Arg Ala Arg Ala Leu Ser Pro Ser
                20                  25                  30
Gly Lys Glu Arg Ala Ala Pro Ser Gln Gly Ser Pro Arg Cys Cys Pro
            35                  40                  45
Leu Ser Pro Gly Ser Ala Arg Gly Ala Arg Gly Glu Asn Gln Pro Arg
        50                  55                  60
Ser Arg Gly Arg Ala Ala Asn Gly Arg Ala Pro Pro Gly Pro Leu Thr
65                  70                  75                  80
Arg Arg Leu Ala Gly Arg Ala Arg Thr Pro Arg Pro Lys Trp Leu Phe
                85                  90                  95
Gln Gly Ala Ser Gln Ala Gly Glu Leu Gly Lys Gln Arg Arg Met Pro
                100                 105                 110
Gly Leu Val Lys Arg Val Arg Asp Val
        115                 120
```

```
<210> 4461
<211> 488
<212> DNA
<213> Homo sapiens
```

```
<400> 4461
acagagtcct acaccagcac tgcaatggcc cccaagggca tcttctgtaa cccgtacaac
60
aatctgatct tcatctgggg caacttcctc ctgcagagct ctaacaagga aaacttcatc
120
```

```
tacctggcag acttcccccaa ggaactgtcc atcaaataca tggccagatc gttccgtggg
180
gctgtggcta ttgtcacaga dacggaggag gtgggctgcc ccgcccttct ccccattccc
240
tctctgccca cccccaaacc ccagggccc ctctttcccc cgtcacagta aaggagccaa
300
gggaaggggg caccctcggg gaccctgaga aagggcagtg aagctccatt tataactgaa
360
actcctggaa ctcagggtaa gtgtcagctc caaagtcacg cagaccggag ctatgatccg
420
atgttcagag gcggccctct ttcatcccac agtgtggtcg ttcacttcat aaatattgag
480
catttaaa
488
```

```
<210> 4462
<211> 96
<212> PRT
<213> Homo sapiens
```

```
<400> 4462
Thr Glu Ser Tyr Thr Ser Thr Ala Met Ala Pro Lys Gly Ile Phe Cys
1               5                   10                  15
Asn Pro Tyr Asn Asn Leu Ile Phe Ile Trp Gly Asn Phe Leu Leu Gln
                20                  25                  30
Ser Ser Asn Lys Glu Asn Phe Ile Tyr Leu Ala Asp Phe Pro Lys Glu
            35                  40                  45
Leu Ser Ile Lys Tyr Met Ala Arg Ser Phe Arg Gly Ala Val Ala Ile
        50                  55                  60
Val Thr Glu Thr Glu Glu Val Gly Cys Pro Ala Leu Leu Pro Ile Pro
65                  70                  75                  80
Ser Leu Pro Thr Pro Lys Pro Gln Gly Pro Leu Phe Pro Pro Ser Gln
                85                  90                  95
```

```
<210> 4463
<211> 2662
<212> DNA
<213> Homo sapiens
```

```
<400> 4463
nnccacctcc ctctcatggc tagtaggaga gactggtgct tgccccgccc ggtggactaa
60
ctcgcttaat tttaaataaa aagtcgagga cacggcggtc gttttcccga agacatgggc
120
cctcccatgg gccatttgct ccctggaggc cctcgcgtct tgctgagccc ggggagttag
180
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240
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300
gcggaggcgg ccgatttggg gctggggggcc gccgtccccg tggagctgag gcgggagcga
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cgcatggtgt gcgtggagta cccgggagtg gtgcgtgatg tggctaagat gctgccgact
420
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ctgggcggtg aggaaggcgt ctcccggatc tacgcagacc ccaccaagag gctggagctg
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780
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1380
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1680
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1740
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1800
ccatccgacg gcagtgaaaa cgaaatggag acagagattc tggactacgt gtgacagggc
1860
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1920
ctccccattg ccacccacag tgcccggaat ggccctagga ggccctctga ggagagctag
1980
agtcccagca aagggtgcag ctgaccctag cactggctgt gacatgctgc ttggtgctgc
2040

3648

```
ctctggtcct gaggggttag ggacatcccc aaagggtata ccctggctct gccacccatg
2100
aaccagccca gcatccagcc agtgagtggg cacccaatgc ctctcaggat gagaccagta
2160
aatgccggag gtggagctgg gcagctgtgg agccccaggc cacaggccag tctcgcttgg
2220
ctctcatgac tgtggtggtg gagatagcgt ggggagcctc gcccatggtc tcacgtggca
2280
agaagtgcct ttagctctgg atcccaaccg tttggcacag ctttggccac agccaggccc
2340
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2400
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2460
atattccttc attcattcct tcattcattc agtgacatgc tggcagtgct ggcctgtgcc
2520
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2580
ttcttctcta aatgaatacc cttctgacga agtcatggga gacggggcct gctgtcctgt
2640
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2662
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```
<210> 4464
<211> 519
<212> PRT
<213> Homo sapiens
```

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<400> 4464
Met Ala Ala Glu Ala Ala Asp Leu Gly Leu Gly Ala Ala Val Pro Val
1               5                   10                  15
Glu Leu Arg Arg Glu Arg Arg Met Val Cys Val Glu Tyr Pro Gly Val
            20                  25                  30
Val Arg Asp Val Ala Lys Met Leu Pro Thr Leu Gly Gly Glu Glu Gly
        35                  40                  45
Val Ser Arg Ile Tyr Ala Asp Pro Thr Lys Arg Leu Glu Leu Tyr Phe
    50                  55                  60
Arg Pro Lys Asp Pro Tyr Cys His Pro Val Cys Ala Asn Arg Phe Ser
65                  70                  75                  80
Thr Ser Ser Leu Leu Leu Arg Ile Arg Lys Arg Thr Arg Arg Gln Lys
                85                  90                  95
Gly Val Leu Gly Thr Glu Ala His Ser Glu Val Thr Phe Asp Met Glu
            100                 105                 110
Ile Leu Gly Ile Ile Ser Thr Ile Tyr Lys Phe Gln Gly Met Ser Asp
        115                 120                 125
Phe Gln Tyr Leu Ala Val His Thr Glu Ala Gly Gly Lys His Thr Ser
    130                 135                 140
Met Tyr Asp Lys Val Leu Met Leu Arg Pro Glu Lys Glu Ala Phe Phe
145                 150                 155                 160
His Gln Glu Leu Pro Leu Tyr Ile Pro Pro Pro Ile Phe Ser Arg Leu
                165                 170                 175
Asp Ala Pro Val Asp Tyr Phe Tyr Arg Pro Glu Thr Gln His Arg Glu
            180                 185                 190
Gly Tyr Asn Asn Pro Pro Ile Ser Gly Glu Asn Leu Ile Gly Leu Ser
```

```
        195                200                205
Arg Ala Arg Arg Pro His Asn Ala Ile Phe Val Asn Phe Glu Asp Glu
    210                215                220
Glu Val Pro Lys Gln Pro Leu Glu Ala Ala Ala Gln Thr Trp Arg Arg
225                230                235                240
Val Cys Thr Asn Pro Val Asp Arg Lys Val Glu Glu Glu Leu Arg Lys
                245                250                255
Leu Phe Asp Ile Arg Pro Ile Trp Ser Arg Asn Ala Val Lys Ala Asn
                260                265                270
Ile Ser Val His Pro Asp Lys Leu Lys Val Leu Leu Pro Phe Ile Ala
                275                280                285
Tyr Tyr Met Ile Thr Gly Pro Trp Arg Ser Leu Trp Ile Arg Phe Gly
    290                295                300
Tyr Asp Pro Arg Lys Asn Pro Asp Ala Lys Ile Tyr Gln Val Leu Asp
305                310                315                320
Phe Arg Ile Arg Cys Gly Met Lys His Gly Tyr Ala Pro Ser Asp Leu
                325                330                335
Pro Val Lys Ala Lys Arg Ser Thr Tyr Asn Tyr Ser Leu Pro Ile Thr
                340                345                350
Val Lys Lys Thr Ser Ser Gln Leu Val Thr Met His Asp Leu Lys Gln
                355                360                365
Gly Leu Gly Arg Ser Gly Thr Ser Gly Ala Arg Lys Pro Ala Ser Ser
    370                375                380
Lys Tyr Lys Leu Lys Asp Ser Val Tyr Ile Phe Arg Glu Gly Ala Leu
385                390                395                400
Pro Pro Tyr Arg Gln Met Phe Tyr Gln Leu Cys Asp Leu Asn Val Glu
                405                410                415
Glu Leu Gln Lys Ile Ile His Arg Asn Asp Gly Ala Glu Asn Ser Cys
                420                425                430
Thr Glu Arg Asp Gly Trp Cys Leu Pro Lys Thr Ser Asp Glu Leu Arg
                435                440                445
Asp Thr Met Ser Leu Met Ile Arg Gln Thr Ile Arg Ser Lys Arg Pro
    450                455                460
Ala Leu Phe Ser Ser Ser Ala Lys Ala Asp Gly Gly Lys Glu Gln Leu
465                470                475                480
Thr Tyr Glu Ser Gly Glu Asp Glu Glu Asp Glu Glu Glu Glu Glu Glu
                485                490                495
Glu Glu Glu Asp Phe Lys Pro Ser Asp Gly Ser Glu Asn Glu Met Glu
                500                505                510
Thr Glu Ile Leu Asp Tyr Val
                515
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<210> 4465
<211> 1291
<212> DNA
<213> Homo sapiens

<400> 4465
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60
gtgggcgaac ggtaccgcga cctgatcgag gcgnccgaca ccatcggcca gatgcgccgt
120
ngcgccgtgg ggctagtgga cgccgtgaag gccaccgacc agtactgcgc ccgcctccgc
180

caggccggct cggccgcgcc ccggccaccg cgggcccagc agccacagca gccatcccaa
240
gagaagttct acagcatggc tgccagatca agctactctt agaaattccg gagaagatct
300
ggagctcgat ggaagcctct cagtgtctcc acgccacacn agctctacct gctctgctgc
360
cacctccaca gcctgctcca gctggattct tctagttccc gatacagtcc cgtcctctcc
420
cggtttccta tactcatccg gcaggtggcg ccgccagcc acttccggtc aactattctg
480
catgaaagca agatgttgct caaatgccaa ggtgtgtctg accaagctgt ggccgaggcc
540
ctgtgctcta taatgctctt agaagagagt tctcctcgcc aagccctcac agacttcctg
600
ctggccagaa aggcaactat tcagaaactt ctcaaccagc acaccatgg tgctggtatc
660
aaggctcaga tttgctcatt agtggagttg ctggccacca ctctgaagca agctcatgcc
720
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780
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840
caggaagaga tgaaactctg cagctggttt aaacacctgc cagcatccat cgtcgagttc
900
cagccaacac tccgaaccct tgcacatccc atcagtcagg aatacctgaa agacacgctg
960
cagaaatgga tccacatgtg taatgaagac attaaaaatg ggatcaccaa cctgctcatg
1020
tacgtgaaga gcatgaaggg tctcgcggga atccgggacg ccatgtggga gttacttacc
1080
agtgagtcca ccaatcacag ctgggatgtg ctatgtaccc gcnttctgga gaagccgctc
1140
ttgttctggg aagatatgat gcagcaactg ttccttgacc gattacagac tctgacaaaa
1200
gaaggctttg actccatctc cagtagtncc aaggagctct ggtttcang tttgcaggaa
1260
cttgaaagca gcaccagcaa ctcccacttc a
1291

<210> 4466
<211> 93
<212> PRT
<213> Homo sapiens

<400> 4466
Gly Leu Glu Arg Gln Val Arg Ala Glu Ile Glu His Lys Lys Glu Glu
 1   5   10   15
Leu Arg Gln Met Val Gly Glu Arg Tyr Arg Asp Leu Ile Glu Ala Xaa
             20   25   30
Asp Thr Ile Gly Gln Met Arg Arg Xaa Ala Val Gly Leu Val Asp Ala
         35   40   45
Val Lys Ala Thr Asp Gln Tyr Cys Ala Arg Leu Arg Gln Ala Gly Ser
     50   55   60
Ala Ala Pro Arg Pro Pro Arg Ala Gln Gln Pro Gln Gln Pro Ser Gln

```
65                        70                        75                        80
Glu Lys Phe Tyr Ser Met Ala Ala Arg Ser Ser Tyr Ser
                    85                        90
```

<210> 4467
<211> 1142
<212> DNA
<213> Homo sapiens

<400> 4467
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nnagatgtcc ctaaggtaga ggtgttggaa cgggagctgg cctggctgaa ggagcatctg
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tcccagctgg agtccctgt ggtgtttgt cacaatgacc tgctctgcaa gaatatcatc
120
tatgacagca tcaaaggtca cgtgcggttc attgactatg aatatgctgg ctacaactac
180
caagcttttg acattggcaa ccatttcaat gagtttgcag gcgtgaatga ggtggattac
240
tgcctgtacc cggcgcggga gacccagctg cagtggctgc actactacct gcaggcacaa
300
aaggggatgg ccgtgacccc cagggaggtg caaaggctct acgtgcaagt caacaagttt
360
gccctggcgt ctcacttctt ctgggctctc tgggccctca tccagaacca gtactccacc
420
atcgactttg atttcctcag gtacgcagtg atccgattca accagtactt caaggtgaag
480
cctcaagcgt cagccttgga gatgccaaag tgaccagcca ccccatccct cccctaccca
540
tctgtctggc cagacctgtt ctccagagct caattctgca ctctgggatc cacacccttg
600
gacagggtgg gagaggggac acatgggtgt ccagggagaa ggctctgtcc ctgccgccag
660
accccagtgg ttgccactga agacctcatt ctcctgtctg gaggggctga taggacccccc
720
ttccggggggt cccccttcacc ccaccaggct tgggaggaag tgcctgcagc caggtcctga
780
accataacca cccctgggaa acacatcatt cccagcctca ggccctgctg gaattggggc
840
tgccttatat gtgtgtttac cccttcctgg cctggggaag gaggcgggga gggctccttt
900
ctacctccag tgccctgagc ctccagtccg tctcccctg catgccccat gtgggaggtg
960
ctgagctcca aaccagcatc acaccaactc tgacacatgg atgtacctat cttggtgatg
1020
ggtggggggcc aagaattgag catgacatct tccccagcag ccacctcctc tgagatccct
1080
caccttctcc aaaccagatc caatcaaacc tcagcccgag gaaacatgct cccctcacgc
1140
gt
1142
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<210> 4468
<211> 170
<212> PRT

<213> Homo sapiens

<400> 4468
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Xaa Asp Val Pro Lys Val Glu Val Leu Glu Arg Glu Leu Ala Trp Leu
 1               5                  10                  15
Lys Glu His Leu Ser Gln Leu Glu Ser Pro Val Val Phe Cys His Asn
                20                  25                  30
Asp Leu Leu Cys Lys Asn Ile Ile Tyr Asp Ser Ile Lys Gly His Val
        35                  40                  45
Arg Phe Ile Asp Tyr Glu Tyr Ala Gly Tyr Asn Tyr Gln Ala Phe Asp
    50                  55                  60
Ile Gly Asn His Phe Asn Glu Phe Ala Gly Val Asn Glu Val Asp Tyr
65                  70                  75                  80
Cys Leu Tyr Pro Ala Arg Glu Thr Gln Leu Gln Trp Leu His Tyr Tyr
                85                  90                  95
Leu Gln Ala Gln Lys Gly Met Ala Val Thr Pro Arg Glu Val Gln Arg
            100                 105                 110
Leu Tyr Val Gln Val Asn Lys Phe Ala Leu Ala Ser His Phe Phe Trp
            115                 120                 125
Ala Leu Trp Ala Leu Ile Gln Asn Gln Tyr Ser Thr Ile Asp Phe Asp
            130                 135                 140
Phe Leu Arg Tyr Ala Val Ile Arg Phe Asn Gln Tyr Phe Lys Val Lys
145                 150                 155                 160
Pro Gln Ala Ser Ala Leu Glu Met Pro Lys
                165                 170
```

<210> 4469
<211> 409
<212> DNA
<213> Homo sapiens

<400> 4469
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atctatgatg cacaacatgc caatttggct ggcacgctga gcggccatgc ctcctgggtg
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ctgaacgttg cattctgtcc tgatgacact cactttgttt ccagatccca gtgttggtca
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180
gtgctttaga ggcctcctgc gagccttggt tttgaagctt taacaggcct ccctcccatc
240
tggaaatagg tagctgtgtc tgagactcct ggagaacaat taatatgagg gccaggcaga
300
tcacaatttc aggaaaatgg ctaccctgtg aggagagaaa gccacccaat gatgctgata
360
cctggccatt tcctgtaccg aggcatggng ttggggggtc tgaagttag
409
```

<210> 4470
<211> 55
<212> PRT
<213> Homo sapiens

<400> 4470
```
Ile Tyr Asp Ala Gln His Ala Asn Leu Ala Gly Thr Leu Ser Gly His
```

```
    1                    5                   10                   15
Ala Ser Trp Val Leu Asn Val Ala Phe Cys Pro Asp Asp Thr His Phe
              20                   25                   30
Val Ser Arg Ser Gln Cys Trp Ser Gly Leu Gly Trp Pro Arg Gln Leu
         35                   40                   45
Glu Ser Arg Arg Trp Thr Thr
      50                   55


<210> 4471
<211> 1771
<212> DNA
<213> Homo sapiens

<400> 4471
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agtttcctct tctggaaatt ggggaatctt catgtcacct tcttgacagc atttgccagg
120
catccagcag gcgcttaata aatggccaag tcattgtttg ggtttctaaa taaggctctc
180
ctaatggccg ggtctggcca cggtcccagt gtccctgggc agccctccga ggggccggca
240
cagggcgcac tataaatgag cggctgcgca cgcaggggca ctgcaacgcg gaggagcagg
300
atggagatcc ctgtgcctgt gcagccgtct tggctgcgcc gcgcctcggc cccgttgccc
360
ggactttcgg cgcccggacg cctctttgac cagcgcttcg gcgaggggct gctggaggcc
420
gagctggctg cgctctgccc caccacgctc gcccctact acctgcgcgc acccagcgtg
480
gcgctgcccg tcgcccaggt gccgacggac cccggccact tttcggtgct gctagacgtg
540
aagcacttct cgccggagga aattgctgtc aaggtggtgg cgaacacgt ggaggtgcac
600
gcgcgccacg aggagcgccc ggatgagcac ggattcgtcg cgcgcgagtt ccaccgtcgc
660
taccgcctgc cgcctggcgt ggatccggct gccgtgacgt ccgcgctgtc ccccgagggc
720
gtcctgtcca tccaggccgc accagcgtcg gcccaggccc caccgccagc cgcagccaag
780
taggaggggg ctgggccgcg cccgcacccc gggagcctcc tcaggctccc tctattaaag
840
ccgatctgac tccgcccagc cagatgtccc gagtgcgcca aggactgtcc tctcacccac
900
tcctggattc tgccctgacc tccatcctgg acactgcctt gataacatag acccttccac
960
tgacaccctc gctctcacac cccctccagc tttccgaccc cacaccgaca actccccggc
1020
ttccagaccc taccagcact accctaaccc tcagccgaca gtctcagccc caccgaccca
1080
cttcttggc atatagcccc acttaagacc cctcctctac ttccttctga gtcctctaca
1140
aagacatccg ggtactacat ttccatccct tccctatttt gacaccaaat tatggtgtag
1200
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acagccctcc cccaaccccca ggccagtcag gcacaatccc cccacccccc aaacgtcctg
1260
gactgcacag acctcccact ccagaccatc caggcctggt tcccaagacc cgatccttcc
1320
cctgcaacca gacagtctac aactgcccc tccagcccat tttctgccgt gaaaccccag
1380
ccagccacac cagactctgg aaccctttt cgactgcccc aactcttgga caccaggcca
1440
actagaacac ccaacaccaa actgtacaga ctctcccacc ccaacctccc cagactctgc
1500
acggatgtcc taggcccct ccccaactct aaccagaccc catcccccta agtccctttg
1560
tcttgacccc caagtcttca accagatatc ctcggcaacc cacctcccac cctcctcctc
1620
ttctccttca gacccaact gagcacccgc tctgattccc cacagccttt ctccctgcca
1680
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1740
aaaagaaaaa aaagtcgacg cggccggaat t
1771

<210> 4472
<211> 160
<212> PRT
<213> Homo sapiens

<400> 4472
Met Glu Ile Pro Val Pro Val Gln Pro Ser Trp Leu Arg Arg Ala Ser
1   5   10   15
Ala Pro Leu Pro Gly Leu Ser Ala Pro Gly Arg Leu Phe Asp Gln Arg
            20   25   30
Phe Gly Glu Gly Leu Leu Glu Ala Glu Leu Ala Ala Leu Cys Pro Thr
        35   40   45
Thr Leu Ala Pro Tyr Tyr Leu Arg Ala Pro Ser Val Ala Leu Pro Val
        50   55   60
Ala Gln Val Pro Thr Asp Pro Gly His Phe Ser Val Leu Leu Asp Val
65   70   75   80
Lys His Phe Ser Pro Glu Glu Ile Ala Val Lys Val Val Gly Glu His
                85   90   95
Val Glu Val His Ala Arg His Glu Glu Arg Pro Asp Glu His Gly Phe
            100   105   110
Val Ala Arg Glu Phe His Arg Arg Tyr Arg Leu Pro Pro Gly Val Asp
        115   120   125
Pro Ala Ala Val Thr Ser Ala Leu Ser Pro Glu Gly Val Leu Ser Ile
    130   135   140
Gln Ala Ala Pro Ala Ser Ala Gln Ala Pro Pro Pro Ala Ala Ala Lys
145   150   155   160

<210> 4473
<211> 1255
<212> DNA
<213> Homo sapiens

<400> 4473

3655

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gccggcgcga tgccccgccc cttcgatagc tcatctttgc gcgccgcagt cgcgcggagc
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ccggcttccg acgtgcagcc tggcagtgca gtgagctgtc tggccttttg tccttgatcc
120
ttggttaagg aaatgaccaa ccagtacggt attctcttca aacaagagca agcccatgat
180
gatgccattt ggtcagttgc ttgggggaca aacaagaagg aaaactctga gacagtggtc
240
acaggctccc tagatgacct ggtgaaggtc tggaaatggc gtgatgagag gctggaccta
300
cagtggagtc tggagggaca tcagctggga gtggtgtctg tggacatcag ccacaccctt
360
cccattgctg cctccagttc tctagatgct catattcgac tctgggactt ggaaaatggc
420
aaacagatga agtctataga tgcaggaccg gtggatgcct ggactttggc attctctccg
480
gactcccagc atctggcaac aggaactcac atggggaaag tgaacatttt tggtgtggaa
540
agtggaaaaa aagaatactc tttggacact agaggaaaat tcatccttag tattgcatat
600
agtcctgatg gaaaatacct ggccagcgga gccatagatg gaatcatcaa tattttttgat
660
attgcaactg gaaaacttct gcataccctg gaaggccatg ccatgcccat tcgctccttg
720
accttttccc cggactccca gctccttgtc actgcttcag atgatggcta catcaagatc
780
tatgatgtac aacatgccaa tttggctggc acgctgagcg gccatgcctc ctgggtgctg
840
aacgttgcat tctgtcctga tgacactcac tttgtttcca gttcgtctga caaaagtgta
900
aaagtttggg atgttggaac gaggacttgt gttcacacct tctttgatca ccaggatcag
960
gtctggggag taaaatacaa tggaaatggt tcaaaaattg tgtctgttgg agatgaccag
1020
gaaattcaca tctatgattg tccaatttaa acatcaaagt ctccaggctt atgctgcaaa
1080
gagaatgtac ggattgatca tgacattcct taccttctta ggcttgttta aaagaaatat
1140
agcatttatt gtagcaaaga cttaaatttt gtagatacaa tatgaatctt ttcatgtttt
1200
attggaaatg ctgttcatac tttaacataa agctttctta atgcaaaaaa aaaaa
1255
```

```
<210> 4474
<211> 305
<212> PRT
<213> Homo sapiens
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<400> 4474
Met Thr Asn Gln Tyr Gly Ile Leu Phe Lys Gln Glu Gln Ala His Asp
 1               5                  10                  15
Asp Ala Ile Trp Ser Val Ala Trp Gly Thr Asn Lys Lys Glu Asn Ser
                20                  25                  30
Glu Thr Val Val Thr Gly Ser Leu Asp Asp Leu Val Lys Val Trp Lys
```

```
                35                          40                          45
Trp Arg Asp Glu Arg Leu Asp Leu Gln Trp Ser Leu Glu Gly His Gln
          50                          55                          60
Leu Gly Val Val Ser Val Asp Ile Ser His Thr Leu Pro Ile Ala Ala
65                          70                          75                          80
Ser Ser Ser Leu Asp Ala His Ile Arg Leu Trp Asp Leu Glu Asn Gly
                          85                          90                          95
Lys Gln Met Lys Ser Ile Asp Ala Gly Pro Val Asp Ala Trp Thr Leu
              100                         105                         110
Ala Phe Ser Pro Asp Ser Gln His Leu Ala Thr Gly Thr His Met Gly
          115                         120                         125
Lys Val Asn Ile Phe Gly Val Glu Ser Gly Lys Lys Glu Tyr Ser Leu
      130                         135                         140
Asp Thr Arg Gly Lys Phe Ile Leu Ser Ile Ala Tyr Ser Pro Asp Gly
145                         150                         155                         160
Lys Tyr Leu Ala Ser Gly Ala Ile Asp Gly Ile Ile Asn Ile Phe Asp
                  165                         170                         175
Ile Ala Thr Gly Lys Leu Leu His Thr Leu Glu Gly His Ala Met Pro
              180                         185                         190
Ile Arg Ser Leu Thr Phe Ser Pro Asp Ser Gln Leu Leu Val Thr Ala
          195                         200                         205
Ser Asp Asp Gly Tyr Ile Lys Ile Tyr Asp Val Gln His Ala Asn Leu
      210                         215                         220
Ala Gly Thr Leu Ser Gly His Ala Ser Trp Val Leu Asn Val Ala Phe
225                         230                         235                         240
Cys Pro Asp Asp Thr His Phe Val Ser Ser Ser Ser Asp Lys Ser Val
                  245                         250                         255
Lys Val Trp Asp Val Gly Thr Arg Thr Cys Val His Thr Phe Phe Asp
              260                         265                         270
His Gln Asp Gln Val Trp Gly Val Lys Tyr Asn Gly Asn Gly Ser Lys
          275                         280                         285
Ile Val Ser Val Gly Asp Asp Gln Glu Ile His Ile Tyr Asp Cys Pro
      290                         295                         300
Ile
305


<210> 4475
<211> 475
<212> DNA
<213> Homo sapiens

<400> 4475
acgcgtgaac ccgtgagctt gggaggggat atcgtccaag cgaggtctct ctgatcccgc
60
tggtgtccag actccttctg gagttccaat cccacccctg gcacactgtc catctctggc
120
tggtctgtcg tgaagctgga gagccgtgca aggcgacaga gccttctgtg tggcccgtcc
180
tggcgctctg gggcaagggc tgacttgagc tgcttcgtct gctcatctgc tgtctgccag
240
ctgccctcag acctcctcct gggtgcagcc cgttcccact tgagagggag gtggtcttca
300
ctttaggggg taggcacatc cctgtttgcg ccttgccccg acagcctcgt caatgcccag
360
```

ccacttctga gggctggagg gacaggaact tcctttcttc cccctttctg tctcctcgcg
420
tgggtacaaa agcacgtctg tagtccatgt gtgtgaagag aggacgcatt ctaga
475

<210> 4476
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4476
Met Cys Leu Pro Pro Lys Val Lys Thr Thr Ser Leu Ser Ser Gly Asn
 1   5   10   15
Gly Leu His Pro Gly Gly Gly Leu Arg Ala Ala Gly Arg Gln Gln Met
             20   25   30
Ser Arg Arg Ser Ser Ser Ser Gln Pro Leu Pro Gln Ser Ala Arg Thr
         35   40   45
Gly His Thr Glu Gly Ser Val Ala Leu His Gly Ser Pro Ala Ser Arg
     50   55   60
Gln Thr Ser Gln Arg Trp Thr Val Cys Gln Gly Trp Asp Trp Asn Ser
65   70   75   80
Arg Arg Ser Leu Asp Thr Ser Gly Ile Arg Glu Thr Ser Leu Gly Arg
                 85   90   95
Tyr Pro Leu Pro Ser Ser Arg Val His Ala
             100   105

<210> 4477
<211> 1153
<212> DNA
<213> Homo sapiens

<400> 4477
ctcttggcct ggcctcctgc agtgccacgc tccgtgtatt tgacaagctg agttggacac
60
tccatgtggt agagtgtcag tttgtcaaat accccaagtg cggcacatgc ttaccagctc
120
taggccaggg cagatgggat atgacgaatg gactgccagc tggatacaag gatgctcacc
180
aagcaccaag ttctcacaag ttattttatg tgactttgca ggaactgagg cattatatct
240
gaggacacca ggggaaaagt gtggcatctc agggaaatac agccctgggc tgtgtctaca
300
cacaccatga gagtgctgat gggggcgcaa tagtcttgaa aatgtataaa gtgtccagga
360
atggaagtgc tctttgattc attattattt tcttccttca tattcccctc ccagagtctc
420
ctatctagga catcagcatt ctcacacaag cctaatggct tatctgagta agcagggctt
480
agaaattcac tttcttgata ctcagtcttg ccttctaaac actccttgat cttgcctacc
540
tctccccttt tccacatgtc ttttcctgta ggaacacttt ctccatttat tcctgcctat
600
ccaattcttc cctatatttc ctggaccagc taaagtccag tgtttccaga gacttttgaa
660

```
agtcaactta cacttttttcc ttcttcattc acaaagctct tcttccctgg gccctggtat
720
gtatgccttt ctctcctact gtctaatagc acctcgtaaa ttgtcaatga acttttctaa
780
ggggtattct tgaattccca actagattgt gagcttctgg aagacaaggc tatgtctttg
840
attgttgtct cccctaccac agcccagtac tttagttaca gaaaataata aatatttact
900
gattgattga ctttcctctt gtccactagc tttaggtttg ggggccaaat tctaccctgg
960
attttgaaaa attcaaactg tgaacaccac aatgttatag agcatatgag gtagtagcca
1020
gcatgaagga tgtttttcttc ctgagaaaca gtgtcaaggg ctggaggaag agggcaaaat
1080
agcagactca gagggcaaat aaattttggt attacttggt cacacaaggt tatacaggtg
1140
ttttcttgta gga
1153


<210> 4478
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4478
Met Trp Lys Arg Gly Glu Val Gly Lys Ile Lys Glu Cys Leu Glu Gly
1               5                   10                  15
Lys Thr Glu Tyr Gln Glu Ser Glu Phe Leu Ser Pro Ala Tyr Ser Asp
            20                  25                  30
Lys Pro Leu Gly Leu Cys Glu Asn Ala Asp Val Leu Asp Arg Arg Leu
        35                  40                  45
Trp Glu Gly Asn Met Lys Glu Glu Asn Asn Asn Glu Ser Lys Ser Thr
    50                  55                  60
Ser Ile Pro Gly His Phe Ile His Phe Gln Asp Tyr Cys Ala Pro Ile
65                  70                  75                  80
Ser Thr Leu Met Val Cys Val Asp Thr Ala Gln Gly Cys Ile Ser Leu
                85                  90                  95
Arg Cys His Thr Phe Pro Leu Val Ser Ser Asp Ile Met Pro Gln Phe
            100                 105                 110
Leu Gln Ser His Ile Lys
        115


<210> 4479
<211> 2158
<212> DNA
<213> Homo sapiens

<400> 4479
nngcggcggc ctgcggcggg ttcggtgggc ccaatcccgg ggcggtgcgg ctgtttcggg
60
cgcgggcccc gcttttccgc accctgctcc ggcctcgact acggcgagcc tgagcgcggc
120
ggcggcccac gcgcagcaca gggagagatg agcagcacca gcagtaagag ggctccgacc
180
```

```
acggcaaccc agaggctgaa gcaggactac cttcgcatta agaaagaccc ggtgccttac
240
atctgtgccg agcccctccc ttcgaatatt ctcgagtggc actatgtcgt ccgaggccca
300
gagatgaccc cttatgaagg tggctattac catggaaaac taatttttcc cagagaattt
360
cctttcaaac ctcccagtat ctatatgatc actcccaacg ggaggtttaa gtgcaacacc
420
aggctgtgtc tttctatcac ggatttccac ccggacacgt ggaacccggc ctggtctgtc
480
tccaccatcc tgactgggct cctgagcttc atggtggaga agggccccac cctgggcagt
540
atagagacgt cggacttcac gaaaagacaa ctggcagtgc agagtttagc atttaatttg
600
aaagataaag tcttttgtga attatttcct gaagtcgtgg aggagattaa acaaaaacag
660
aaagcacaag acgaactcag tagcagaccc cagactctcc ccttgccaga cgtggttcca
720
gacggggaga cgcacctcgt ccagaacggg attcagctgc tcaacgggca tgcgccgggg
780
gccgtcccaa acctcgcagg gctccagcag gccaaccggc accacggact cctgggtggc
840
gccctggcga acttgtttgt gatagttggg tttgcagcct ttgcttacac ggtcaagtac
900
gtgctgagga gcatcgcgca ggagtgaggc ccaggcgccg agacccaagg cgccactgag
960
ggcaccgcgc accagagcgt gacctcggca ggctggacac actgcccagc acaggcagac
1020
ccaccaggct cctaggttta gcttttaaaa acctgaaagg ggaagcaaaa accaaaatgt
1080
gtgactgggc tttggaggag actggagcct cagccctgtc ctggccacgg ccgctggggg
1140
ctggtgtggg tgggccttgt gtgctggatt tgtagcttat cttccgtgtt gtctttggac
1200
ctgtttagt aaacccgttt ttcattttat tagatgtggt cacttagaaa tgcaaacttg
1260
ctgccgaccg cgggctgctc ctgcgttctt ggagctcctg gcgcgtttct cggagctccc
1320
ggctcctcag cgggtgggaa cctcggggcc caggggtgga gctggcgtcc gcgggtgctg
1380
gtctggcctg gccgtgtggt gatgaggctt agcggggcca gtgacggccg tggctcagga
1440
tccataagtc ggggtttggt ctcagcattt acaaatgtgt ttacagtcag aatgaaacac
1500
attccttcta gaaagtgctt gggggttttt gctgccctgg aagccaggag cctgctcact
1560
ccaaccacaa gtcgcccttg actgcggcgg ccgcgagcgg ggcggggggct gccggtgccc
1620
tccgcaggcc gggcctcctg ggcgcccctc ggtgctgcag ctggggggc cttgggtacc
1680
tgcagagcct tttctctgaa ttccttatgt ccggtgggcc agaagcccgt cctcctatgc
1740
tggtggaagg cggaggaccg gagtccctgc agaaggcccc gtgcactcgg gggcctccct
1800
```

3660

cacatcccgt gccccctgcg ctggccttca cagtaggtaa tggctccggc ccgggtgttc
1860
gctgtccacg gaacatggca gaggggcacc ccggcccgga aagacgccag agccagcagg
1920
ggctgtttcg ggccgcgtgg ctccccgggt ctcggccgtc tcccctcttc tgcgtctgtt
1980
ccgtgacttc gcctgggtgg gatgtaccgc aggtgcatcg cgtcgaggtg gggcacggcc
2040
gccggcaaga aacccaccct gtccggaggc gggcgtgaga caagcccagc ccgcacgcgc
2100
tcatctttct tcgttttttg atcagtttat tcagaattgc tctataattt accaattg
2158

<210> 4480
<211> 308
<212> PRT
<213> Homo sapiens

<400> 4480
Xaa Arg Arg Pro Ala Ala Gly Ser Val Gly Pro Ile Pro Gly Arg Cys
1   5   10   15
Gly Cys Phe Gly Arg Gly Pro Arg Phe Ser Ala Pro Cys Ser Gly Leu
            20   25   30
Asp Tyr Gly Glu Pro Glu Arg Gly Gly Gly Pro Arg Ala Ala Gln Gly
        35   40   45
Glu Met Ser Ser Thr Ser Ser Lys Arg Ala Pro Thr Thr Ala Thr Gln
    50   55   60
Arg Leu Lys Gln Asp Tyr Leu Arg Ile Lys Lys Asp Pro Val Pro Tyr
65   70   75   80
Ile Cys Ala Glu Pro Leu Pro Ser Asn Ile Leu Glu Trp His Tyr Val
                85   90   95
Val Arg Gly Pro Glu Met Thr Pro Tyr Glu Gly Gly Tyr Tyr His Gly
            100   105   110
Lys Leu Ile Phe Pro Arg Glu Phe Pro Phe Lys Pro Pro Ser Ile Tyr
        115   120   125
Met Ile Thr Pro Asn Gly Arg Phe Lys Cys Asn Thr Arg Leu Cys Leu
    130   135   140
Ser Ile Thr Asp Phe His Pro Asp Thr Trp Asn Pro Ala Trp Ser Val
145   150   155   160
Ser Thr Ile Leu Thr Gly Leu Leu Ser Phe Met Val Glu Lys Gly Pro
                165   170   175
Thr Leu Gly Ser Ile Glu Thr Ser Asp Phe Thr Lys Arg Gln Leu Ala
            180   185   190
Val Gln Ser Leu Ala Phe Asn Leu Lys Asp Lys Val Phe Cys Glu Leu
        195   200   205
Phe Pro Glu Val Val Glu Glu Ile Lys Gln Lys Gln Lys Ala Gln Asp
    210   215   220
Glu Leu Ser Ser Arg Pro Gln Thr Leu Pro Leu Pro Asp Val Val Pro
225   230   235   240
Asp Gly Glu Thr His Leu Val Gln Asn Gly Ile Gln Leu Leu Asn Gly
                245   250   255
His Ala Pro Gly Ala Val Pro Asn Leu Ala Gly Leu Gln Gln Ala Asn
            260   265   270
Arg His His Gly Leu Leu Gly Gly Ala Leu Ala Asn Leu Phe Val Ile

```
         275              280                 285
Val Gly Phe Ala Ala Phe Ala Tyr Thr Val Lys Tyr Val Leu Arg Ser
     290              295                 300
Ile Ala Gln Glu
305
```

<210> 4481
<211> 320
<212> DNA
<213> Homo sapiens

<400> 4481
```
ggcacccctg tggggatggg ctgtgcctgg aggctggggg gctgcatctg gacagcctct
60
gggtggggcc tcggaacctc ctgctgtgca gccagaaaac aggactcggc ctgtccaccc
120
acgtggggag gggacccggg gctgggcttc gtaggggctt caaggacccc tgacttctgg
180
ggtgtgcctg acagcagggg aggccccaga gctggccttg gccatgtcca gtccctaatt
240
gacctttgtc ccttccttcc cctgcctctc tgtgcgtcgc tggactcgcc acgggagttc
300
tcacgaatgg gcacccaatt
320
```

<210> 4482
<211> 101
<212> PRT
<213> Homo sapiens

<400> 4482
```
Met Gly Cys Ala Trp Arg Leu Gly Gly Cys Ile Trp Thr Ala Ser Gly
  1               5               10               15
Trp Gly Leu Gly Thr Ser Cys Cys Ala Ala Arg Lys Gln Asp Ser Ala
         20               25               30
Cys Pro Pro Thr Trp Gly Gly Asp Pro Gly Leu Gly Phe Val Gly Ala
         35               40               45
Ser Arg Thr Pro Asp Phe Trp Gly Val Pro Asp Ser Arg Gly Gly Pro
     50               55               60
Arg Ala Gly Leu Gly His Val Gln Ser Leu Ile Asp Leu Cys Pro Phe
65               70               75               80
Leu Pro Leu Pro Leu Cys Ala Ser Leu Asp Ser Pro Arg Glu Phe Ser
              85               90               95
Arg Met Gly Thr Gln
              100
```

<210> 4483
<211> 1852
<212> DNA
<213> Homo sapiens

<400> 4483
```
nnggttgcgg cgtgccggga gctgagttat agctgtgact tctgccctgc caggccgcac
60
```

acaagctggc tgacccggtt tgtaaaaatg gaatttcaag cagtagtgat ggcagtaggt
120
ggaggatctc ggatgacaga cctaacttcc agcattccca aacctctgct tccagttggg
180
aacaaacctt taatttggta cccattgaac ctgcttgagc gtgttggatt tgaagaagtc
240
attgtggtta caaccaggga tgttcaaaag gctctatgtg cagaattcaa gatgaaaatg
300
aagccagata ttgtgtgtat tcctgatgac gctgacatgg gaactgcaga ttctttgcgc
360
tacatatatc caaaacttaa gacagatgtg ctggtgctga gctgtgatct gataacagac
420
gttgccttac atgaggttgt ggacctgttt agagcttatg atgcatcact tgctatgttg
480
atgagaaaag gccaagatag catagaacct gttcccggtc aaaagggaa aaaaaaagca
540
gtggagcagc gtgacttcat tggagtggac agcacaggaa agaggctgct cttcatggct
600
aatgaagcag acttggatga agagctggtc attaagggat ccatcctaca gaagcatcct
660
agaatacgtt tccacacggg tcttgtggat gcccacctct actgtttgaa aaaatacatc
720
gtggatttcc taatggaaaa tgggtcaata acttctatcc ggagtgaact gattccatat
780
ttagtgagaa aacagttttc ctcagcttcc tcacaacagg acaagaaga aaaagaggag
840
gatctaaaga aaaaggagct gaagtcctta gatatctaca gttttataaa agaagccaat
900
acactgaacc tggctcccta tgatgcctgc tggaatgcct gtcgaggaga caggtgggaa
960
gacttgtcca gatcacaggt gcgctgctat gtccacatca tgaaagaggg gctctgctct
1020
cgagtgagca cactgggact ctacatggaa gcaaacagac aggtgcccaa attgctgtct
1080
gctctctgtc cagaagaacc accagtccat tcgtcagccc agattgtcag caaacacctg
1140
gttggagttg acagcctcat tgggccagag acacagattg gagagaagtc atccattaag
1200
cgctcagtca ttggctcatc ctgtctcata aaagatagag tgactattac caattgcctt
1260
ctcatgaact cagtcactgt ggaggaagga agcaatatcc aaggcagtgt catctgcaac
1320
aatgctgtga tcgagaaggg tgcagacatc aaggactgct tgattggaag tggccagagg
1380
attgaagcca aagctaaacg agtgaatgag gtgatcgtgg ggaatgacca gctcatggag
1440
atctgagttc tgagcaagtc agactccttc cttttggcct ccaaagccac agatgttggc
1500
cggcccacct gtttaactct gtatttattt cccaataaag aagggcttcc aaaggcatgc
1560
tggagacttg tggagcagtc caaagctcca tgtcaggtgg gctccaggtg tacacagtgt
1620
atgttcatgt gtcatgtggt aaagatcatc tggagcaagt gtgtgggaca ggacagatac
1680

3663

agtggcctaa ctcttgtgtg ccaagatgta tcggtggggc agcagctgtc caatgtaaag
1740
ctcctaggaa ggctactttc tgactggctg acccaaccca gtcctgaaag tatccctcac
1800
ctaaaaggac ctgggagtac ttcagtccct tatcctaatc agcctttcta ga
1852

<210> 4484
<211> 452
<212> PRT
<213> Homo sapiens

<400> 4484
Met Glu Phe Gln Ala Val Val Met Ala Val Gly Gly Gly Ser Arg Met
1   5   10   15
Thr Asp Leu Thr Ser Ser Ile Pro Lys Pro Leu Leu Pro Val Gly Asn
            20   25   30
Lys Pro Leu Ile Trp Tyr Pro Leu Asn Leu Leu Glu Arg Val Gly Phe
        35   40   45
Glu Glu Val Ile Val Val Thr Thr Arg Asp Val Gln Lys Ala Leu Cys
    50   55   60
Ala Glu Phe Lys Met Lys Met Lys Pro Asp Ile Val Cys Ile Pro Asp
65   70   75   80
Asp Ala Asp Met Gly Thr Ala Asp Ser Leu Arg Tyr Ile Tyr Pro Lys
            85   90   95
Leu Lys Thr Asp Val Leu Val Leu Ser Cys Asp Leu Ile Thr Asp Val
            100   105   110
Ala Leu His Glu Val Val Asp Leu Phe Arg Ala Tyr Asp Ala Ser Leu
        115   120   125
Ala Met Leu Met Arg Lys Gly Gln Asp Ser Ile Glu Pro Val Pro Gly
    130   135   140
Gln Lys Gly Lys Lys Lys Ala Val Glu Gln Arg Asp Phe Ile Gly Val
145   150   155   160
Asp Ser Thr Gly Lys Arg Leu Leu Phe Met Ala Asn Glu Ala Asp Leu
            165   170   175
Asp Glu Glu Leu Val Ile Lys Gly Ser Ile Leu Gln Lys His Pro Arg
            180   185   190
Ile Arg Phe His Thr Gly Leu Val Asp Ala His Leu Tyr Cys Leu Lys
        195   200   205
Lys Tyr Ile Val Asp Phe Leu Met Glu Asn Gly Ser Ile Thr Ser Ile
    210   215   220
Arg Ser Glu Leu Ile Pro Tyr Leu Val Arg Lys Gln Phe Ser Ser Ala
225   230   235   240
Ser Ser Gln Gln Gly Gln Glu Glu Lys Glu Glu Asp Leu Lys Lys Lys
            245   250   255
Glu Leu Lys Ser Leu Asp Ile Tyr Ser Phe Ile Lys Glu Ala Asn Thr
            260   265   270
Leu Asn Leu Ala Pro Tyr Asp Ala Cys Trp Asn Ala Cys Arg Gly Asp
        275   280   285
Arg Trp Glu Asp Leu Ser Arg Ser Gln Val Arg Cys Tyr Val His Ile
    290   295   300
Met Lys Glu Gly Leu Cys Ser Arg Val Ser Thr Leu Gly Leu Tyr Met
305   310   315   320
Glu Ala Asn Arg Gln Val Pro Lys Leu Leu Ser Ala Leu Cys Pro Glu

```
                        325                       330                       335
Glu Pro Pro Val His Ser Ser Ala Gln Ile Val Ser Lys His Leu Val
                340                       345                       350
Gly Val Asp Ser Leu Ile Gly Pro Glu Thr Gln Ile Gly Glu Lys Ser
            355                       360                       365
Ser Ile Lys Arg Ser Val Ile Gly Ser Ser Cys Leu Ile Lys Asp Arg
        370                       375                       380
Val Thr Ile Thr Asn Cys Leu Leu Met Asn Ser Val Thr Val Glu Glu
    385                       390                       395                       400
Gly Ser Asn Ile Gln Gly Ser Val Ile Cys Asn Asn Ala Val Ile Glu
                405                       410                       415
Lys Gly Ala Asp Ile Lys Asp Cys Leu Ile Gly Ser Gly Gln Arg Ile
                420                       425                       430
Glu Ala Lys Ala Lys Arg Val Asn Glu Val Ile Val Gly Asn Asp Gln
            435                       440                       445
Leu Met Glu Ile
        450
```

```
<210> 4485
<211> 513
<212> DNA
<213> Homo sapiens
```

```
<400> 4485
ggatccacgt cagcccgaca tcgctgcttt atagccatgt tcacgtgtca tatgcgtctc
60
agggtaccca aaatcacagg gccaactcac ggggctccta ccactctagc cagtcatggg
120
gtcaggaata ccccaccctc atccaaaatg tgtactcccc caacctttg tgttcagacc
180
cacaggcctt atagcgccct gtgcgtgccc cagcatttcc ctgcctagtg gggctccagg
240
cgggcagggt gacctccttc cccaggcagt tccacacctg atcccaaaag tcagttctaa
300
tgaagtggat tcattcaaat actggtggtt ctggttggcc cgggtaagtg agggcacaga
360
gaaaacccc aaatgtagag tatgtgacac agcacaaagc agtcccatgc caaactgatg
420
cagtggcatt ccaagtttag agttccaccg cttgagacca tccaggattc ttttaccaat
480
tacttgtcct actgtctcct atctatttca tga
513
```

```
<210> 4486
<211> 100
<212> PRT
<213> Homo sapiens
```

```
<400> 4486
Met Gly Ser Gly Ile Pro His Pro His Pro Lys Cys Val Leu Pro Gln
1               5                   10                  15
Pro Phe Val Phe Arg Pro Thr Gly Leu Ile Ala Pro Cys Ala Cys Pro
                20                  25                  30
Ser Ile Ser Leu Pro Ser Gly Ala Pro Gly Gly Gln Gly Asp Leu Leu
```

```
          35                  ·  40                    45·
Pro Gln Ala Val Pro His Leu Ile Pro Lys Val Ser Ser Asn Glu Val
      50                      55.                   60
Asp Ser Phe Lys Tyr Trp Trp Phe Trp Leu Ala Arg Val Ser Glu Gly
65                  70                    75                    80
Thr Glu Lys Thr Pro Lys Cys Arg Val Cys Asp Thr Ala Gln Ser Ser
                  85                    90                    95
Pro Met Pro Asn
              100
```

<210> 4487
<211> 387
<212> DNA
<213> Homo sapiens

<400> 4487
nnacgcgtaa agatactttt tcttttctgg attcccaatt ttaggtggca gtcgcaaccc
60
atactattcg gacagatggc acagaaaccg ctgcgcctct tggcttgtgg agatgttgaa
120
ggaaagtttg atattttatt caatagagtt caagcaattc agaagaaaag tggaaacttt
180
gatctgctgt tgtgtgtagg aaatttcttt ggctccaccc aagatgctga atgggaggag
240
tataagactg gcatcaagaa agctcctatt cagacatatg tgcttggtgc taataaccag
300
gaaacagtaa aatatttcca ggatgctgat ggatgtgaat tagctgaaaa cattacttat
360
ctgggtcgta aaggtatctt cactgga
387

<210> 4488
<211> 129
<212> PRT
<213> Homo sapiens

<400> 4488
```
Xaa Arg Val Lys Ile Leu Phe Leu Phe Trp Ile Pro Asn Phe Arg Trp
 1               5                  10                    15
Gln Ser Gln Pro Ile Leu Phe Gly Gln Met Ala Gln Lys Pro Leu Arg
              20                    25                    30
Leu Leu Ala Cys Gly Asp Val Glu Gly Lys Phe Asp Ile Leu Phe Asn
          35                    40                    45
Arg Val Gln Ala Ile Gln Lys Lys Ser Gly Asn Phe Asp Leu Leu Leu
      50                    55                    60
Cys Val Gly Asn Phe Phe Gly Ser Thr Gln Asp Ala Glu Trp Glu Glu
65                  70                    75                    80
Tyr Lys Thr Gly Ile Lys Lys Ala Pro Ile Gln Thr Tyr Val Leu Gly
                  85                    90                    95
Ala Asn Asn Gln Glu Thr Val Lys Tyr Phe Gln Asp Ala Asp Gly Cys
              100                   105                   110
Glu Leu Ala Glu Asn Ile Thr Tyr Leu Gly Arg Lys Gly Ile Phe Thr
          115                   120                   125
Gly
```

<210> 4489
<211> 2390
<212> DNA
<213> Homo sapiens

<400> 4489
ngaattcaga ttgtgggggtt gacagaactt cagagtcttg cagttgggcc ccgagttttc
60
cagtacggag tcaaagttgt acttcaggct atgtacttgc tgtggaagtt gatgtggagg
120
gagccaggtg cctatatctt tctccagaac cccccaggtc tgcctagcat tgctgtctgc
180
tggttcgtgg gctgcctttg tggaagcaag ctcgtcattg actggcacaa ctatggctac
240
tccatcatgg gtctggtgca tggccccaac catcccctcg ttctgctggc caagtggtac
300
gagaagttct ttgggcgcct gtcccacctg aacctgtgtg ttaccaatgc tatgcgagaa
360
gacctggcgg ataactggca catcagggct gtgaccgtct acgacaagcc cgcatctttc
420
tttaaagaga cacctctgga cctgcagcac cggctcttca tgaagctggg cagcatgcac
480
tctccgttca gggcccgctc agaacctgag acccagtca cggagcggtc ggccttcacg
540
gagcgggatg ctgggagcgg gctggtgacg cgtctccgtg agcggccagc cctgctggtc
600
agcagcacga gctggacaga ggacgaagac ttctccatcc tgctggcagc tttagaaaag
660
tttgaacaac tgactcttga tggacacaac cttccttctc tcgtctgtgt gataacaggc
720
aaagggcctc tgagggagta ttatagccgc ctcatccacc agaagcactt ccagcacatc
780
caggtctgca ccccctggct ggaggccgag gactaccccc tgcttctagg gtcggcggac
840
ctgggtgtct gtctgcacac gtcctccagt ggcctggacc tgcccatgaa ggtggtggac
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Gln Asn Pro Pro Gly Leu Pro Ser Ile Ala Val Cys Trp Phe Val Gly
     50   55   60
Cys Leu Cys Gly Ser Lys Leu Val Ile Asp Trp His Asn Tyr Gly Tyr
65   70   75   80
Ser Ile Met Gly Leu Val His Gly Pro Asn His Pro Leu Val Leu Leu
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3668

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3670

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3671

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<212> PRT
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<213> Homo sapiens

<400> 4492

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Gln Lys Asp Ile Lys Asp Leu Gly Gly Arg Val Glu Glu Phe Leu Ser
65              70              75              80
Lys Asp Ile Ser Tyr Leu Ile Ser Asn Lys Lys Glu Ala Lys Phe Ala
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Gln Thr Leu Gly Arg Ile Ser Pro Val Pro Ser Pro Glu Ser Ala Tyr
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Thr Ala Glu Thr Thr Ser Pro His Pro Ser His Asp Gly Ser Ser Phe
        115             120             125
Lys Ser Pro Asp Thr Val Cys Leu Ser Arg Gly Lys Leu Leu Val Glu
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Lys Ala Ile Lys Asp His Asp Phe Ile Pro Ser Asn Ser Ile Leu Ser
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Asn Ala Leu Ser Trp Gly Val Lys Ile Leu His Ile Asp Asp Ile Arg
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Ser Thr Ser Val Arg Asp Gly Gly Lys Arg Val Gly Ser Gly Ala Gln
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Lys Thr Arg Thr Gly Arg Leu Lys Lys Pro Phe Val Lys Val Glu Asp
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225             230             235             240
Phe Ile Asn Tyr Ser Ile Gln Lys Pro Cys Ser Pro Phe Asp Val Asp
            245             250             255
Lys Pro Ser Ser Met Gln Lys Gln Thr Gln Val Lys Leu Arg Ile Gln
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<211> 1829
<212> DNA
<213> Homo sapiens

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tgagatacaa gtcatccatg cacagccact atcataccct ttattctcac tgaaaggcag
1380
aactcagaac ctgttatttt atgtctgtaa tcatgtactt tggcatcttt tggaggaaag
1440
gggcaggata actcactgga atgtacagta ttttgctagt gcatttcaag gaatggaatc
1500
ttctccagta tgaaattacc agatataaaa taatgtaatg atgctgagga tataagcttt
1560
tagaaggtaa tttgatggta tttctttctc gaatgaaaag ctgctggttt accctcaacc
1620
ctattcatta gcattaccat gagtgaattt atatctaatt atttccactt gccctgttct
1680
cttcacacca aggaagctcc agatccagta tcttgtttgg cctcaaaaca gaagcagctt
1740
cttttgtctc ccagcagtag tgagccactc agtctcttcc acaggaagtt tgggagccta
1800
cattccttga gtcagggagc ttaattaca
1829


<210> 4494
<211> 111
<212> PRT
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<210> Homo sapiens

<400> 4494
Met Ile Met Gly Met Ile Ala Gln Asn Lys Lys Lys Ser Cys Leu Thr
1   5   10   15
Thr Val Phe Tyr Arg Arg Asp Trp Glu Lys Ser Ser Cys Phe Leu Cys
            20   25   30
Asp Leu Ile Ser Glu Glu Thr Asp Pro Lys Ile Ile Thr Ala Gly Asn
        35   40   45
Leu Val His Leu Ala Leu Arg Phe Lys Cys Asn Gln Asn Cys Pro Gln
    50   55   60
Gly Pro Ala Ile Lys Ala Leu Ser Leu Ser Thr Phe Trp Tyr Leu Val
65   70   75   80
Arg Glu Leu Phe Thr Val Arg Lys Cys Gly Lys Ile Ala Leu Cys Val
                85   90   95
Cys Val Cys Val Cys Val Cys Val Cys Asn Leu Leu Gly Trp Gly Gly
            100   105   110

<210> 4495
<211> 3623
<212> DNA
<213> Homo sapiens

<400> 4495
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tattgagagg aaaacacaag tccttaaact gcaaagatgt ttgccaggat gtctgatctc
120
catgttctgc tgttaatggc tctggtggga aagacagcct gtgggttctc cctgatgtct
180
ttattggaaa gcctggaccc agactggacc cctgaccagt atgattacag ctacgaggat
240
tataatcagg aagagaacac cagtagcaca cttacccacg ctgagaatcc tgactggtac
300
tacactgagg accaagctga tccatgccag cccaacccct gtgaacacgg tggggactgc
360
ctcgtccatg ggagcacctt cacatgcagc tgcctggctc ctttctctgg gaataagtgt
420
cagaaagtgc aaaatacgtg caaggacaac ccatgtggcc ggggccaatg tctcattacc
480cctactaccg ctgtgtctgt aaacacccct acacaggtcc cagctgctcc   540
caagtggttc ctgtatgcag gccaaacccc tgccagaatg gggctacctg ctcccggcat
600
aagcggagat ccaagttcac ctgtgcctgt cccgaccagt tcaaggggaa attctgtgaa
660
ataggttctg atgactgcta tgttggcgat ggctactctt accgagggaa aatgaatagg
720
acagtcaacc agcatgcgtg cctttactgg aactcccacc tcctcttgca ggagaattac
780
aacatgttta tggaggatgc tgaaacccat gggattgggg aacacaattt ctgcagaaac
840
ccagatgcgg acgaaaagcc ctggtgcttt attaaagtta ccaatgacaa ggtgaaatgg
900
gaatactgtg atgtctcagc ctgctcagcc caggacgttg cctacccaga ggaaagcccc
960

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actgagccat caaccaagct tccgggggttt gactcctgtg gaaagactga gatagcagag
1020
aggaagatca agagaatcta tggaggcttt aaaagcacgg cgggcaagca cccatggcag
1080
gcgtccctcc agtcctcgct gcctctgacc atctccatgc cccagggcca cttctgtggt
1140
ggggcactga tccacccctg ctgggtgctc actgctgccc actgcaccga cataaaaacc
1200
agacatctaa aggtggtgct aggggaccag gacctgaaga aagaagaatt tcatgagcag
1260
agctttaggg tggagaagat attcaagtac agccactaca atgaaagaga tgagattccc
1320
cacaatgata ttgcattgct caagttaaag ccagtggatg gtcactgtgc tctagaatcc
1380
aaatacgtga agactgtgtg cttgcctgat gggtcctttc cctctgggag tgagtgccac
1440
atctctggct ggggtgttac agaaacagga aaagggtccc gccagctcct ggatgccaaa
1500
gtcaagctga ttgccaacac tttgtgcaac tcccgccaac tctatgacca catgattgat
1560
gacagtatga tctgtgcagg aaatcttcag aaacctgggc aagacacctg ccagggtgac
1620
tctggaggcc ccctgacctg tgagaaggac ggcacctact acgtctatgg gatagtgagc
1680
tggggcctgg agtgtgggaa gaggccaggg gtctacaccc aagttaccaa attcctgaat
1740
tggatcaaag ccaccatcaa aagtgaaagt ggcttctaag gtactgtctt ctggacctca
1800
gagcccactc tccttggcac cctgacaccg ggaggcctca tggccaacaa tggacacctc
1860
cagagcctcc aggggaccac acagtagact atccctactc taagcagaga caactgccac
1920
ccagcctggg ccttcccaga ccagcatttg cacaatatca ccaggcttct tctgcctccc
1980
ttggtaaccc aaggaatgat ggaatcaaca caacatagta tgtttgcttt ccttacccaa
2040
ttgtaccttc tagaaaatca gtgttcacag agactgcctc caccacaggc atcctgcaaa
2100
tgcagactcc agaatcccca gcatcagcgg gaaccaccat cacatctta ttcctcagcc
2160
cagacactcg aggcactcaa cagaatcagc catccacgtc taggtatcag agaggaccac
2220
aaatacaaca ttctccatct gctttcagag ttattatttt aataaaggaa gatctgggat
2280
gggctggtgg gccattccag cttgccgaaa tcaaagccat ctgaagcctg tctctggtga
2340
acaaacttcc tctctggcct ctcaggaatc agggtggaca tggctcacaa cagcagggcc
2400
ttcttctttt tgacgtgcag aatctcagtg gcatctgggt tcacctcccc actctgatga
2460
tctccagcct ccactgcttc tgcccccccgg taagctccct ggagacccag gccccttgcg
2520
ttggccagtt ccgcagcccg ccgagccatt tccactttgt aggagccagg aggggtccag
2580
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ccaacacctc tggtcaggtt caagtctgat ttatacttga catcactctg cagctggtgg
2640

gccttctgag catgcctgag gcccagctgc tccgggtcgc aggtgggctg gggcaggggc
2700

tgcctgtagt gcacatcact ggccagctgc tggctcctct tggcctgaag gaggccgggc
2760

tggtctgtgc tgctgtgaaa ctgggaccga ctcttggcaa agtccttctt gtactcattg
2820

tcactctgga gcctgccaac gttgaggaaa tgcttcatcc ttgggtcatc gtcgacactg
2880

cggtacccga tctgcaggcc tcggtcccgc aggaaagcct ctttgtaccg gaaatcactg
2940

gcgatctccc tagatgcccg ggcagtctgg aaggggatgg catccagcct gaagtcataa
3000

ctgccagccc gggtctgctc ccaggagttt ctgtagactt tgtcactcag atgcagcgca
3060

ttgaggcgag ctcgggtgaa atcgggatgg tcggggatca gggtgtatct gtgcagggat
3120

tctgcatctc cagatctata catgcgctca ttgcagtgca tatagctgtt cttggcatga
3180

accaggtctg gggagtcaac cactgtggtg aacttgatac tgtctggttt tttacggtac
3240

ttggtctcgc tgatgagttc tccagccttc tttgcactct ccatctgtgg ggatctcagc
3300

gccagccatc ctatgccctt catgccgatc aggtctgact tgtagcgcaa ctcactctgc
3360

agggcatggg ctttcttggc ccaggccatc ttcaggtcct cgggcagtgc tgtgaacttg
3420

tgatactgtg tcctgtagtc gtggtcgctg ccagagcct gggcattctt ggcatggacc
3480

aggtgcacca tgtccatggg cagatggaac tgggcttggc tgctggtcgc cccctcctg
3540

tactgaagct cgctctgcag ctggcccatg cgccggcagt gctggatccg ggggtcgtct
3600

cttacactct ggggccctat gag
3623

<210> 4496
<211> 560
<212> PRT
<213> Homo sapiens

<400> 4496
Met Phe Ala Arg Met Ser Asp Leu His Val Leu Leu Leu Met Ala Leu
1   5   10   15
Val Gly Lys Thr Ala Cys Gly Phe Ser Leu Met Ser Leu Leu Glu Ser
            20   25   30
Leu Asp Pro Asp Trp Thr Pro Asp Gln Tyr Asp Tyr Ser Tyr Glu Asp
        35   40   45
Tyr Asn Gln Glu Glu Asn Thr Ser Ser Thr Leu Thr His Ala Glu Asn
    50   55   60
Pro Asp Trp Tyr Tyr Thr Glu Asp Gln Ala Asp Pro Cys Gln Pro Asn
65   70   75   80
Pro Cys Glu His Gly Gly Asp Cys Leu Val His Gly Ser Thr Phe Thr

```
                        85                    90                    95
        Cys Ser Cys Leu Ala Pro Phe Ser Gly Asn Lys Cys Gln Lys Val Gln
                   100                   105                   110
        Asn Thr Cys Lys Asp Asn Pro Cys Gly Arg Gly Gln Cys Leu Ile Thr
                   115                   120                   125
        Gln Ser Pro Pro Tyr Tyr Arg Cys Val Cys Lys His Pro Tyr Thr Gly
                   130                   135                   140
        Pro Ser Cys Ser Gln Val Val Pro Val Cys Arg Pro Asn Pro Cys Gln
        145                   150                   155                   160
        Asn Gly Ala Thr Cys Ser Arg His Lys Arg Arg Ser Lys Phe Thr Cys
                   165                   170                   175
        Ala Cys Pro Asp Gln Phe Lys Gly Lys Phe Cys Glu Ile Gly Ser Asp
                   180                   185                   190
        Asp Cys Tyr Val Gly Asp Gly Tyr Ser Tyr Arg Gly Lys Met Asn Arg
                   195                   200                   205
        Thr Val Asn Gln His Ala Cys Leu Tyr Trp Asn Ser His Leu Leu Leu
                   210                   215                   220
        Gln Glu Asn Tyr Asn Met Phe Met Glu Asp Ala Glu Thr His Gly Ile
        225                   230                   235                   240
        Gly Glu His Asn Phe Cys Arg Asn Pro Asp Ala Asp Glu Lys Pro Trp
                   245                   250                   255
        Cys Phe Ile Lys Val Thr Asn Asp Lys Val Lys Trp Glu Tyr Cys Asp
                   260                   265                   270
        Val Ser Ala Cys Ser Ala Gln Asp Val Ala Tyr Pro Glu Glu Ser Pro
                   275                   280                   285
        Thr Glu Pro Ser Thr Lys Leu Pro Gly Phe Asp Ser Cys Gly Lys Thr
                   290                   295                   300
        Glu Ile Ala Glu Arg Lys Ile Lys Arg Ile Tyr Gly Gly Phe Lys Ser
        305                   310                   315                   320
        Thr Ala Gly Lys His Pro Trp Gln Ala Ser Leu Gln Ser Ser Leu Pro
                   325                   330                   335
        Leu Thr Ile Ser Met Pro Gln Gly His Phe Cys Gly Gly Ala Leu Ile
                   340                   345                   350
        His Pro Cys Trp Val Leu Thr Ala Ala His Cys Thr Asp Ile Lys Thr
                   355                   360                   365
        Arg His Leu Lys Val Val Leu Gly Asp Gln Asp Leu Lys Lys Glu Glu
                   370                   375                   380
        Phe His Glu Gln Ser Phe Arg Val Glu Lys Ile Phe Lys Tyr Ser His
        385                   390                   395                   400
        Tyr Asn Glu Arg Asp Glu Ile Pro His Asn Asp Ile Ala Leu Leu Lys
                   405                   410                   415
        Leu Lys Pro Val Asp Gly His Cys Ala Leu Glu Ser Lys Tyr Val Lys
                   420                   425                   430
        Thr Val Cys Leu Pro Asp Gly Ser Phe Pro Ser Gly Ser Glu Cys His
                   435                   440                   445
        Ile Ser Gly Trp Gly Val Thr Glu Thr Gly Lys Gly Ser Arg Gln Leu
                   450                   455                   460
        Leu Asp Ala Lys Val Lys Leu Ile Ala Asn Thr Leu Cys Asn Ser Arg
        465                   470                   475                   480
        Gln Leu Tyr Asp His Met Ile Asp Asp Ser Met Ile Cys Ala Gly Asn
                   485                   490                   495
        Leu Gln Lys Pro Gly Gln Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro
                   500                   505                   510
        Leu Thr Cys Glu Lys Asp Gly Thr Tyr Tyr Val Tyr Gly Ile Val Ser
```

```
                515                   .  520                    525
        Trp Gly Leu Glu Cys Gly Lys Arg Pro Gly Val Tyr Thr Gln Val Thr
            530                     .535                     540
        Lys Phe Leu Asn Trp Ile Lys Ala Thr Ile Lys Ser Glu Ser Gly Phe
        545           .                550           555                 560
```

<210> 4497
<211> 840
<212> DNA
<213> Homo sapiens

<400> 4497

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nnacgcgtga aacagaaagc agagaaaaag cgactcaaga agaagcgtca aaaggaacgg
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aagcgacagg agcgtttgga gcagtactgt ggggagccca aggccagcac tacctcagat
120
ggagatgaga gcccccatc cagccctgga aacccagttc agggacagtg tggtgaagaa
180
gaggactcac tggatctatc tagcactttt gtgtctctgg ctttgcgcaa ggttggggat
240
tggcccctca gtgcccgcag agagaaggga ctgaaccagg agccccaagg caggggtctg
300
gccctccaga agatgggtca agaggaagag agccctccaa gagaggagag gccccagcag
360
agtccaaagg catctccggg actgctggca gctgccttac aacagagcca ggaactggca
420
aagttgggta ccagctttgc tcaaaatggt ttctaccatg aggccgtggt cctcttcacc
480
caggccttga agctcaaccc ccaggaccac cggttatttg gaaatcgttc cttctgccat
540
gagcggttgg gtcagccagc gtgggccctg gctgatgccc aggtggccct taccctacgg
600
cctggctggc cccggggcct cttccgcctg ggcaaggcct tgatgggact acagcgcttc
660
agagaggcag ctgctgtgtt tcaggaaact ctgagaggtg ggtcccagcc tgacgcagcc
720
cgagagctcc gctcttgcct tctccacctc acactgcagg gtcagcgagg aggaatctgt
780
gcaccgcctc tgtcacctgg ggccctccag ccacttcccc atgctgagct ggcaccctca
.840
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<210> 4498
<211> 280
<212> PRT
<213> Homo sapiens

<400> 4498

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        Xaa Arg Val Lys Gln Lys Ala Glu Lys Lys Arg Leu Lys Lys Lys Arg
        .1                  5                   10                  15
        Gln Lys Glu Arg Lys Arg Gln Glu Arg Leu Glu Gln Tyr Cys Gly Glu
                        20                  25                  30
        Pro Lys Ala Ser Thr Thr Ser Asp Gly Asp Glu Ser Pro Pro Ser Ser
                35                  40                  45
        Pro Gly Asn Pro Val Gln Gly Gln Cys Gly Glu Glu Glu Asp Ser Leu
```

```
        50                      55                      60
Asp Leu Ser Ser Thr Phe Val Ser Leu Ala Leu Arg Lys Val Gly Asp
65                      70                      75                      80
Trp Pro Leu Ser Ala Arg Arg Glu Lys Gly Leu Asn Gln Glu Pro Gln
                85                      90                      95
Gly Arg Gly Leu Ala Leu Gln Lys Met Gly Gln Glu Glu Glu Ser Pro
            100                     105                     110
Pro Arg Glu Glu Arg Pro Gln Gln Ser Pro Lys Ala Ser Pro Gly Leu
        115                     120                     125
Leu Ala Ala Ala Leu Gln Gln Ser Gln Glu Leu Ala Lys Leu Gly Thr
        130                     135                     140
Ser Phe Ala Gln Asn Gly Phe Tyr His Glu Ala Val Val Leu Phe Thr
    145                     150                     155                     160
Gln Ala Leu Lys Leu Asn Pro Gln Asp His Arg Leu Phe Gly Asn Arg
                165                     170                     175
Ser Phe Cys His Glu Arg Leu Gly Gln Pro Ala Trp Ala Leu Ala Asp
                180                     185                     190
Ala Gln Val Ala Leu Thr Leu Arg Pro Gly Trp Pro Arg Gly Leu Phe
        195                     200                     205
Arg Leu Gly Lys Ala Leu Met Gly Leu Gln Arg Phe Arg Glu Ala Ala
    210                     215                     220
Ala Val Phe Gln Glu Thr Leu Arg Gly Gly Ser Gln Pro Asp Ala Ala
225                     230                     235                     240
Arg Glu Leu Arg Ser Cys Leu Leu His Leu Thr Leu Gln Gly Gln Arg
                245                     250                     255
Gly Gly Ile Cys Ala Pro Pro Leu Ser Pro Gly Ala Leu Gln Pro Leu
                260                     265                     270
Pro His Ala Glu Leu Ala Pro Ser
                275                     280
```

```
<210> 4499
<211> 562
<212> DNA
<213> Homo sapiens

<400> 4499
ntcatcacag actatgctgt tcagccacat gtgggcacgg gggcagtgaa ggtgactcca
60
gctcacagtc ctgccgatgc tgagatgggg gcccgacatg gcttgagccc cttgaatgtc
120
attgcggagg atgggaccat gacctccctc tgcggggact ggttgcaggg tcttcaccgg
180
tttgtggccc gggaaaagat aatgtctgtg ctgagtgaac ggggcctatt ccggggcctc
240
cagaaccacc ccatggtact gcccatctgc aggtaatctc attttaactc ctttactaag
300
ggctacccca aaagggaatg tatggagctt aagggtgaca ataggatggg ctctgcaccc
360
ctccgttaga atacgagctc cgtgtcggtt ttattcgcta ttgtatcctc agtaccaagg
420
gcctggcatg gcatggggtc ctgtgcccct gggagaagtc acaggccgg aagagcagtg
480
gactcaccct gtctctcttt cagccgttct ggggatgtga tagaatacct gctgaagaac
540
```

```
cagtggtttg tccgctgcca cg
562
```

```
<210> 4500
<211> 91
<212> PRT
<213> Homo sapiens
```

```
<400> 4500
Xaa Ile Thr Asp Tyr Ala Val Gln Pro His Val Gly Thr Gly Ala Val
1               5                   10                  15
Lys Val Thr Pro Ala His Ser Pro Ala Asp Ala Glu Met Gly Ala Arg
            20                  25                  30
His Gly Leu Ser Pro Leu Asn Val Ile Ala Glu Asp Gly Thr Met Thr
        35                  40                  45
Ser Leu Cys Gly Asp Trp Leu Gln Gly Leu His Arg Phe Val Ala Arg
    50                  55                  60
Glu Lys Ile Met Ser Val Leu Ser Glu Arg Gly Leu Phe Arg Gly Leu
65                  70                  75                  80
Gln Asn His Pro Met Val Leu Pro Ile Cys Arg
                85                  90
```

```
<210> 4501
<211> 1866
<212> DNA
<213> Homo sapiens
```

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<400> 4501
gggtggataa gacaccgcgt cccctccaat tcccgtaagc accccttgct ccatcctgcg
60
ccccaatacc tcagctagcc cccttcccca cttcttacac tccaaactca gccgggacag
120
acctctgctg ccgccgcccc cacgaacgtg tgacgacggc tggaggccaa cagagtccct
180
acaggtggtg ctcacggtaa tgcaccgaca atgagtggct gttttccagt ttctggcctc
240
cgctgcctat ctagggacgg caggatggcc gcgcagggcg cgccgcgctt cctcctgacc
300
ttcgacttcg acgagactat cgtggacgaa aacagcgacg attcgatcgt gcgcgccgcg
360
ccgggccagc ggctcccgga gagcctgcga gccacctacc gcgagggctt ctacaacgag
420
tacatgcagc gcgtcttcaa gtacctgggc gagcagggcg tgcggccgcg ggacctgagc
480
gccatctacg aagccatccc tttgtcgcca ggcatgagcg acctgctgca gtttgtggca
540
aaacagggcg cctgcttcga ggtgattctc atctccgatg ccaacacctt tggcgtggag
600
agctcgctgc gcgccgccgg ccaccacagc ctgttccgcc gcatcctcag caacccgtcg
660
gggccggatg cgcggggact gctggctctg cggccgttcc acacacacag ctgcgcgcgc
720
tgccccgcca acatgtgcaa gcacaaggtg ctcagcgact acctgcgcga gcgggcccac
780
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3683

gacggcgtgc acttcgagcg cctcttctac gtgggtgatg gtgcaaatga cttctgcccc
840
atggggctgc tggcgggcgg cgacgtggcc ttcccgcgcc gcggctaccc catgcaccgc
900
ctcattcagg aggcccagaa ggccgagccc agctcgttcc gcgccagcgt ggtgccctgg
960
gaaacggctg cagatgtgcg cctccacctg caacaggtgc tgaagtcgtg ctgagtctgg
1020
ccgcctgcag gggggtaccc gggccaacgg cggaggggc ggggaaggga gattcggcaa
1080
agacagcttt actactccct tttccctttg gctttgttat gtccctctgg gaatttctgg
1140
aatctcgtat ttggggggctt ggggaagggg gctcagagcc gtccctatct attcagttaa
1200
cccacctcgg ctgcctcccc cactccactg tgcacggttg agttctggag tctgacccat
1260
cgcggggtgg cgcgcaaacc ttggaaggca gcagtatttc ctggtcctcc caactgggag
1320
gaaggggccc ccccggcagg tgagagaagg aacatctccc gccgctgtaa cttgttgcct
1380
cgggctgcgt gaccgcccct cctccagtct actgtggagg gaacccagga tcctgaaatt
1440
ctcctggccg caagaactcc ccacagaggc agaagagggt ctccacctat ggccccaggc
1500
ctttgcgatc ttgcttcacc caccgcgacc ccacactatt tctgtgctgt ccacactctc
1560
ttgcctcccg acccccgcac tcccttctag cacccccaaa ggaaaagcca gaggaacaat
1620
cgcctcctgg tggtggtacg aggtagcgca ccgtccggct cgggtccgga cagccagtaa
1680
cctcgcagag agtgacggtg tctccttgca tcccagcctc gtctatgcag caagagacca
1740
gggacttcac caaagtcacc ctcgcgggct gggccttcca cgcatccccc ccacccccca
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1860
gtgttt
1866

<210> 4502
<211> 267
<212> PRT
<213> Homo sapiens

<400> 4502
Met Ser Gly Cys Phe Pro Val Ser Gly Leu Arg Cys Leu Ser Arg Asp
1   5   10   15
Gly Arg Met Ala Ala Gln Gly Ala Pro Arg Phe Leu Leu Thr Phe Asp
            20   25   30
Phe Asp Glu Thr Ile Val Asp Glu Asn Ser Asp Asp Ser Ile Val Arg
        35   40   45
Ala Ala Pro Gly Gln Arg Leu Pro Glu Ser Leu Arg Ala Thr Tyr Arg
    50   55   60
Glu Gly Phe Tyr Asn Glu Tyr Met Gln Arg Val Phe Lys Tyr Leu Gly

3684

```
65                      70                       75                        80
Glu Gln Gly Val Arg Pro Arg Asp Leu Ser Ala Ile Tyr Glu Ala Ile
                    85                      90              95
Pro Leu Ser Pro Gly Met Ser Asp Leu Leu Gln Phe Val Ala Lys Gln
                100                     105                 110
Gly Ala Cys Phe Glu Val Ile Leu Ile Ser Asp Ala Asn Thr Phe Gly
            115                     120                 125
Val Glu Ser Ser Leu Arg Ala Ala Gly His His Ser Leu Phe Arg Arg
        130                     135                 140
Ile Leu Ser Asn Pro Ser Gly Pro Asp Ala Arg Gly Leu Leu Ala Leu
145                     150                     155                 160
Arg Pro Phe His Thr His Ser Cys Ala Arg Cys Pro Ala Asn Met Cys
                165                     170                 175
Lys His Lys Val Leu Ser Asp Tyr Leu Arg Glu Arg Ala His Asp Gly
                180                     185                 190
Val His Phe Glu Arg Leu Phe Tyr Val Gly Asp Gly Ala Asn Asp Phe
            195                     200                 205
Cys Pro Met Gly Leu Leu Ala Gly Gly Asp Val Ala Phe Pro Arg Arg
        210                     215                 220
Gly Tyr Pro Met His Arg Leu Ile Gln Glu Ala Gln Lys Ala Glu Pro
225                     230                     235                 240
Ser Ser Phe Arg Ala Ser Val Val Pro Trp Glu Thr Ala Ala Asp Val
                245                     250                 255
Arg Leu His Leu Gln Gln Val Leu Lys Ser Cys
                260                     265
```

<210> 4503
<211> 1983
<212> DNA
<213> Homo sapiens

<400> 4503
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ncggaaggca agtgaaaatg ggtgtccctg ctgcctctta gcaacaagag gggtcaagtg
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acacaaccag ctgactcccg tagaggaaga cactgtggag gccagttctg gagctattgc
120
agcctcggtt gcccggccgg ggacccgagc cgaaaagtta tcgtcagaat gtcgggcaaa
180
gaccgaattg aaatctttcc ctcgcgaatg gcacagacca tcatgaaggc tcgattaaag
240
ggagcacaga caggtcgaaa cctcctgaag aaaaaatctg atgccttaac tcttcgattt
300
cgacagatcc taaagaagat aatagagact aaaatgttga tgggcgaagt gatgagagaa
360
gctgcctttt cactagctga agccaagttc acagcaggtg acttcagcac tacagttatc
420
caaaatgtca ataaagcgca agtgaagatt cgagcgaaga aagataatgt agcaggtgtt
480
actttgccag tatttgaaca ttaccatgaa ggaactgaca gttatgaact gactggttta
540
gccagaggtg gggaacagtt ggctaaatta aagaggaatt atgccaaagc agtggaacta
600
ctggtggaac tagcttctct gcagacttct tttgttactt tggatgaagc tattaagata
660
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accaacaggc gtgtaaatgc cattgaacat ggtgagtatg tcatcattcc ccggattgaa
720
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780
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<210> 4504
<211> 250
<212> PRT
<213> Homo sapiens

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Leu Lys Lys Lys Ser Asp Ala Leu Thr Leu Arg Phe Arg Gln Ile Leu
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Ala Ala Phe Ser Leu Ala Glu Ala Lys Phe Thr Ala Gly Asp Phe Ser
65                  70                  75                  80
Thr Thr Val Ile Gln Asn Val Asn Lys Ala Gln Val Lys Ile Arg Ala
                85                  90                  95
Lys Lys Asp Asn Val Ala Gly Val Thr Leu Pro Val Phe Glu His Tyr
            100                 105                 110
His Glu Gly Thr Asp Ser Tyr Glu Leu Thr Gly Leu Ala Arg Gly Gly
        115                 120                 125
Glu Gln Leu Ala Lys Leu Lys Arg Asn Tyr Ala Lys Ala Val Glu Leu
    130                 135                 140
Leu Val Glu Leu Ala Ser Leu Gln Thr Ser Phe Val Thr Leu Asp Glu
145                 150                 155                 160
Ala Ile Lys Ile Thr Asn Arg Arg Val Asn Ala Ile Glu His Gly Glu
                165                 170                 175
Tyr Val Ile Ile Pro Arg Ile Glu Arg Thr Leu Ala Tyr Ile Ile Thr
                180                 185                 190
Glu Leu Asp Glu Arg Glu Arg Glu Glu Phe Tyr Arg Leu Lys Lys Ile
            195                 200                 205
Gln Glu Lys Lys Lys Ile Leu Lys Glu Lys Ser Glu Lys Asp Leu Glu
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<211> 379
<212> DNA
<213> Homo sapiens

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<210> 4506
<211> 121

<212> PRT
<213> Homo sapiens

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Arg Arg Gln Trp Trp Leu Trp Leu Ser Ser Leu Ser Asn Gln Ile His
        35   40   45
Pro Thr Pro Ser Ala Gln Gly Gln Ala Ala Leu Arg Gln Thr Cys Pro
    50   55   60
His Leu Arg Glu Ser Gly Pro Leu Ser Val Arg His Val Ala Leu Leu
65   70   75   80
Ala Leu Glu Thr Ala Ser His Pro Ser Gly Pro His Thr Asn Gln Ala
                85   90   95
Pro Ser Pro Ala Thr Ser Pro Lys Cys Pro Ser Glu Pro Ala Thr Pro
            100   105   110
Ser Ser Thr Asp Ser Leu Ile Lys Ile
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<210> 4507
<211> 3664
<212> DNA
<213> Homo sapiens

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<210> 4508
<211> 172
<212> PRT
<213> Homo sapiens


<400> 4508
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Phe Gly Phe Val Thr Phe Glu Asn Ile Asp Asp Ala Lys Asp Ala Met
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Met Ala Met Asn Gly Lys Ser Val Asp Gly Arg Gln Ile Arg Val Asp
65                    70                    75                    80
Gln Ala Gly Lys Ser Ser Asp Asn Arg Ser Arg Gly Tyr Arg Gly Gly
                    85                    90                    95
Ser Ala Gly Gly Arg Gly Phe Phe Arg Gly Gly Arg Gly Arg Gly Arg
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Gly Phe Ser Arg Gly Gly Gly Asp Arg Gly Tyr Gly Gly Asn Arg Phe
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Glu Ser Arg Ser Gly Gly Tyr Gly Gly Ser Arg Asp Tyr Tyr Ser Ser
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<212> DNA
<213> Homo sapiens

<400> 4509

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3692

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Ala Thr Arg Thr Leu Phe Ile Gly Asn Leu Glu Lys Thr Thr Thr Tyr
        35                  40                  45
His Asp Leu Arg Asn Ile Phe Gln Arg Phe Gly Glu Ile Val Asp Ile
    50                  55                  60
Asp Ile Lys Lys Val Asn Gly Val Pro Gln Tyr Ala Phe Leu Gln Tyr
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Thr Asn Cys Val Trp Leu Asp Gly Leu Ser Ser Asn Val Ser Asp Gln
                115                      120                      125
Tyr Leu Thr Arg His Phe Cys Arg Tyr Gly Pro Val Val Lys Val Val
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Phe Asp Arg Leu Lys Gly Met Ala Leu Val Leu Tyr Asn Glu Ile Glu
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Tyr Ala Gln Ala Ala Val Lys Glu Thr Lys Gly Arg Lys Ile Gly Gly
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Tyr His Cys Met Glu Lys Ser Gly Gln Asp Ile Arg Asp Phe Tyr Glu
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Ala Arg Val Leu Ser Lys Lys Gln Pro Asp Val Ser Ser Arg Glu Val
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Ser Gly Ser Arg Pro Ser Ser Asp Leu Gln Ala Arg Leu Gly Glu Leu
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Ala Gly Glu Ser Val Glu Asn Gln Glu Val Gln Ser Lys Lys Pro Ile
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Pro Ser Lys Pro Gln Leu Lys Gln Leu Gln Val Leu Asp Asp Gln Gly
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Thr Pro Glu Arg Lys Ser Gly Gln Glu Lys Ser His Ser Val Asn Thr
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Glu Glu Lys Ile Gly Ile Asp Ile Asp His Thr Gln Ser Tyr Arg Lys
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Ser Phe His Glu Asp Glu Asp Pro Ile Gly Ser Pro Arg Leu Leu Ser
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Val Lys Gly Ser Pro Lys Val Asp Glu Lys Val Leu Pro Tyr Ser Asn
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Ile Thr Val Arg Glu Glu Ser Leu Lys Phe Asn Pro Tyr Asp Ser Ser
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3700

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2165                2170                2175
Lys Pro Leu Glu Glu Lys Thr Ala Pro Pro Val Thr Asn Asn Ser Glu
                2180                2185                2190
Ile Gln Ala Ser Glu Val Leu Val Ala Ala Asp Lys Glu Lys Val Ala
           2195                2200                2205
Pro Val Ile Ala Pro Lys Ile Thr Ser Val Ile Ser Arg Met Pro Val
           2210                2215                2220
Ser Ile Asp Leu Glu Asn Ser Gln Lys Ile Thr Leu Ala Lys Pro Ala
```

```
        2225              2230              2235              2240
Pro Gln Thr Leu Thr Gly Leu Val Ser Ala Leu Thr Gly Leu Val Asn
                   2245              2250              2255
Val Ser Leu Val Pro Val Asn Ala Leu Lys Gly Pro Val Lys Gly Ser
              2260              2265              2270
Val Thr Thr Leu Lys Ser Leu Val Ser Thr Pro Ala Gly Pro Val Asn
              2275              2280              2285
Val Leu Lys Gly Pro Val Asn Val Leu Thr Gly Pro Val Asn Val Leu
         2290              2295              2300
Thr Thr Pro Val Asn Ala Thr Val Gly Thr Val Asn Ala Ala Pro Gly
    2305              2310              2315              2320
Thr Val Asn Ala Ala Ala Ser Ala Val Asn Ala Thr Ala Ser Ala Val
              2325              2330              2335
Thr Val Thr Ala Gly Ala Val Thr Ala Ala Ser Gly Gly Val Thr Ala
              2340              2345              2350
Thr Thr Gly Thr Val Thr Met Ala Gly Ala Val Ile Ala Pro Ser Thr
         2355              2360              2365
Lys Cys Lys Gln Arg Ala Ser Ala Asn Glu Asn Ser Arg Phe His Pro
    2370              2375              2380
Gly Ser Met Pro Val Ile Asp Asp Arg Pro Ala Asp Ala Gly Ser Gly
2385              2390              2395              2400
Ala Gly Leu Arg Val Asn Thr Ser Glu Gly Val Val Leu Leu Ser Tyr
              2405              2410              2415
Ser Gly Gln Lys Thr Glu Gly Pro Gln Arg Ile Ser Ala Lys Ile Ser
              2420              2425              2430
Gln Ile Pro Pro Ala Ser Ala Met Asp Ile Glu Phe Gln Gln Ser Val
         2435              2440              2445
Ser Lys Ser Gln Val Lys Pro Asp Ser Val Thr Ala Ser Gln Pro Pro
    2450              2455              2460
Ser Lys Gly Pro Gln Ala Pro Ala Gly Tyr Ala Asn Val Ala Thr His
2465              2470              2475              2480
Ser Thr Leu Val Leu Thr Ala Gln Thr Tyr Asn Ala Ser Pro Val Ile
              2485              2490              2495
Ser Ser Val Lys Ala Asp Arg Pro Ser Leu Glu Lys Pro Glu Pro Ile
         2500              2505              2510
His Leu Ser Val Ser Thr Pro Val Thr Gln Gly Gly Thr Val Lys Val
         2515              2520              2525
Leu Thr Gln Gly Ile Asn Thr Pro Pro Val Leu Val His Asn Gln Leu
    2530              2535              2540
Val Leu Thr Pro Ser Ile Val Thr Thr Asn Lys Lys Leu Ala Asp Pro
2545              2550              2555              2560
Val Thr Leu Lys Ile Glu Thr Lys Val Leu Gln Pro Ala Asn Leu Gly
              2565              2570              2575
Ser Thr Leu Thr Pro His His Pro Pro Ala Leu Pro Ser Lys Leu Pro
         2580              2585              2590
Thr Glu Val Asn His Val Pro Ser Gly Pro Ser Ile Pro Ala Asp Arg
         2595              2600              2605
Thr Val Ser His Leu Ala Ala Ala Lys Leu Asp Ala His Ser Pro Arg
    2610              2615              2620
Pro Ser Gly Pro Gly Pro Ser Ser Phe Pro Arg Ala Ser His Pro Ser
2625              2630              2635              2640
Ser Thr Ala Ser Thr Ala Leu Ser Thr Asn Ala Thr Val Met Leu Ala
              2645              2650              2655
Ala Gly Ile Pro Val Pro Gln Phe Ile Ser Ser Ile His Pro Glu Gln
```

```
                 2660                  2665                  2670
     Ser Val Ile Met Pro Pro His Ser Ile Thr Gln Thr Val Ser Leu Ser
         2675                  2680                  2685
     His Leu Ser Gln Gly Glu Val Arg Met Asn Thr Pro Thr Leu Pro Ser
         2690                  2695                  2700
     Ile Thr Tyr Ser Ile Arg Pro Glu Ala Leu His Ser Pro Arg Ala Pro
     2705                  2710                  2715                  2720
     Leu Gln Pro Gln Gln Ile Glu Val Arg Ala Pro Gln Arg Ala Ser Thr
                 2725                  2730                  2735
     Pro Gln Pro Ala Pro Ala Gly Val Pro Ala Leu Ala Ser Gln His Pro
             2740                  2745                  2750
     Pro Glu Glu Glu Val His Tyr His Leu Pro Val Ala Arg Ala Thr Ala
             2755                  2760                  2765
     Pro Val Gln Ser Glu Val Leu Val Met Gln Ser Glu Tyr Arg Leu His
         2770                  2775                  2780
     Pro Tyr Thr Val Pro Arg Asp Val Arg Ile Met Val His Pro His Val
     2785                  2790                  2795                  2800
     Thr Ala Val Ser Glu Gln Pro Arg Ala Ala Asp Gly Val Val Lys Val
                 2805                  2810                  2815
     Pro Pro Ala Ser Lys Ala Pro Gln Gln Pro Gly Lys Glu Ala Ala Lys
                 2820                  2825                  2830
     Thr Pro Asp Ala Lys Ala Ala Pro Thr Pro Thr Pro Ala Pro Val Pro
                 2835                  2840                  2845
     Val Pro Val Pro Leu Pro Ala Pro Ala Pro Ala Pro His Gly Glu Ala
             2850                  2855                  2860
     Arg Ile Leu Thr Val Thr Pro Ser Asn Gln Leu Gln Gly Leu Pro Leu
     2865                  2870                  2875                  2880
     Thr Pro Pro Val Val Val Thr His Gly Val Gln Ile Val His Ser Ser
                 2885                  2890                  2895
     Gly Glu Leu Phe Gln Glu Tyr Arg Tyr Gly Asp Ile Arg Thr Tyr His
             2900                  2905                  2910
     Pro Pro Ala Gln Leu Thr His Thr Gln Phe Pro Ala Ala Ser Ser Val
         2915                  2920                  2925
     Gly Leu Pro Ser Arg Thr Lys Thr Ala Ala Gln Gly Pro Pro Pro Glu
         2930                  2935                  2940
     Gly Glu Pro Leu Gln Pro Pro Gln Pro Val Gln Ser Thr Gln Pro Ala
     2945                  2950                  2955                  2960
     Gln Pro Ala Pro Pro Cys Pro Pro Ser Gln Leu Gly Gln Pro Gly Gln
                 2965                  2970                  2975
     Pro Pro Ser Ser Lys Met Pro Gln Val Ser Gln Glu Ala Lys Gly Thr
             2980                  2985                  2990
     Gln Thr Gly Val Glu Gln Pro Arg Leu Pro Ala Gly Pro Ala Asn Arg
             2995                  3000                  3005
     Pro Pro Glu Pro His Thr Gln Val Gln Arg Ala Gln Ala Glu Thr Gly
         3010                  3015                  3020
     Pro Thr Ser Phe Pro Ser Pro Val Ser Val Ser Met Lys Pro Asp Leu
     3025                  3030                  3035                  3040
     Pro Val Ser Leu Pro Thr Gln Thr Ala Pro Lys Gln Pro Leu Phe Val
                 3045                  3050                  3055
     Pro Thr Thr Ser Gly Pro Ser Thr Pro Pro Gly Leu Val Leu Pro His
             3060                  3065                  3070
     Thr Glu Phe Gln Pro Ala Pro Lys Gln Asp Ser Ser Pro His Leu Thr
             3075                  3080                  3085
     Ser Gln Arg Pro Val Asp Met Val Gln Leu Leu Lys Lys Tyr Pro Ile
```

                                  3705

```
        3090              3095              3100
Val Trp Gln Gly Leu Leu Ala Leu Lys Asn Asp Thr Ala Ala Val Gln
3105              3110              3115              3120
Leu His Phe Val Ser Gly Asn Asn Val Leu Ala His Arg Ser Leu Pro
            3125              3130              3135
Leu Ser Glu Gly Gly Pro Pro Leu Arg Ile Ala Gln Arg Met Arg Leu
        3140              3145              3150
Glu Ala Thr Gln Leu Glu Gly Val Ala Arg Arg Met Thr Leu Ala Ser
        3155              3160              3165
Ala Ser Val Glu Thr Asp Tyr Cys Leu Leu Leu Ala Leu Pro Cys Gly
        3170              3175              3180
Arg Asp Gln Glu Asp Val Val Ser Gln Thr Glu Ser Leu Lys Ala Ala
3185              3190              3195              3200
Phe Ile Thr Tyr Leu Gln Ala Lys Gln Ala Ala Gly Ile Ile Asn Val
            3205              3210              3215
Pro Asn Pro Gly Ser Asn Gln Pro Ala Tyr Val Leu Gln Ile Phe Pro
        3220              3225              3230
Pro Cys Glu Phe Ser Glu Ser His Leu Ser Arg Leu Ala Pro Asp Leu
        3235              3240              3245
Leu Ala Ser Ile Ser Asn Ile Ser Pro His Leu Met Ile Val Ile Ala
        3250              3255              3260
Ser Val
3265
```

```
<210> 4511
<211> 1375
<212> DNA
<213> Homo sapiens

<400> 4511
gctggtcgga ccaggtctct tcccatcact attgaaatgc taaaagttcc agacgatgaa
60
gaagaagagg agcaaacctg tccatccaca ttcagtgaag aaatgacacc tacctcagtc
120
attcctaaat taccacagtg tctacgggag gaagaagaga aggagagcga ctctgattca
180
gaaggtccca ttcagtaccg agatgaagaa gatgaagatg aaagctatca gagtgcactc
240
gccaacaaag tgaagaggaa agacacactg gcaatgaagt tgaaccacag acccagtgaa
300
ccagagttga acctgaattc ttggccttgt aaaagcaagg aggagtggaa tgaaatacgg
360
caccagattg aaacacact gatccggcga ctgagtcaaa gaccaacacc agaagaacta
420
gaacaacgca atatattgca acctaaaaat gaagctgatc gtcaggcaga aaaacgagaa
480
attaaacgtc ggctcactag aaagctcagt caaaggccaa ctgtcgctga actccttgcc
540
aggaagattc tgaggtttaa tgaatatgta gaggtaacag atgctcaaga ttatgaccgg
600
cgagccgaca aaccttggac caaactgacc cctgctgaca aggctgccat aagaaaagaa
660
ttaaatgaat ttaaaagctc cgagatggag gttcatgaag agagcaaaca ttttacacgc
720
```

taccatcgtc catgatgcca aaggttgaga gaggaatcaa catggctgct ttgctgcttc
780
cttctccaaa gtgacatatg gagggaactt tagcacttcc cagcacagcc agaattgcat
840
cctctgggat cttctgaggt ggacagcact ttgaatgtag catttcactg gaacagagtc
900
ttatgtgctg caccgggggc aaaacaacac tttgtcagtg cttttgaacc tttcaatatt
960
gtagcatgct tgaggagttt ttcccttact ggccaccaaa gttctgaacc acttgcaggt
1020
tccaggtttt actggctgca ccacacccct tccctagat gactgcctgt gcagagacac
1080
agtttgcacc attagcctta cctgccctgc cctgattgtg agacccaaat gtgtaggctc
1140
taaattccag ccatcaaatc caattcctgg tggggaaaac cttctggaga cccccaacct
1200
tctgataaaa gagtctctac ctccagggaa agccttctta ccacactggc atatcagatg
1260
aaagcattgc actgtacctc tcgtaacaca gcaatacagt cctcttgagg cactcaagcc
1320
tgagaggaag ctcaggatct gacatgttct ccttttcct cacaagtcat catga
1375

<210> 4512
<211> 244
<212> PRT
<213> Homo sapiens

<400> 4512
Ala Gly Arg Thr Arg Ser Leu Pro Ile Thr Ile Glu Met Leu Lys Val
1   5   10   15
Pro Asp Asp Glu Glu Glu Glu Gln Thr Cys Pro Ser Thr Phe Ser
            20   25   30
Glu Glu Met Thr Pro Thr Ser Val Ile Pro Lys Leu Pro Gln Cys Leu
        35   40   45
Arg Glu Glu Glu Glu Lys Glu Ser Asp Ser Asp Ser Glu Gly Pro Ile
    50   55   60
Gln Tyr Arg Asp Glu Glu Asp Glu Asp Glu Ser Tyr Gln Ser Ala Leu
65   70   75   80
Ala Asn Lys Val Lys Arg Lys Asp Thr Leu Ala Met Lys Leu Asn His
                85   90   95
Arg Pro Ser Glu Pro Glu Leu Asn Leu Asn Ser Trp Pro Cys Lys Ser
            100   105   110
Lys Glu Glu Trp Asn Glu Ile Arg His Gln Ile Gly Asn Thr Leu Ile
            115   120   125
Arg Arg Leu Ser Gln Arg Pro Thr Pro Glu Glu Leu Glu Gln Arg Asn
    130   135   140
Ile Leu Gln Pro Lys Asn Glu Ala Asp Arg Gln Ala Glu Lys Arg Glu
145   150   155   160
Ile Lys Arg Arg Leu Thr Arg Lys Leu Ser Gln Arg Pro Thr Val Ala
                165   170   175
Glu Leu Leu Ala Arg Lys Ile Leu Arg Phe Asn Glu Tyr Val Glu Val
            180   185   190
Thr Asp Ala Gln Asp Tyr Asp Arg Arg Ala Asp Lys Pro Trp Thr Lys

```
              195                    200                    205
Leu Thr Pro Ala Asp Lys Ala Ala Ile Arg Lys Glu Leu Asn Glu Phe
         210                    215                    220
Lys Ser Ser Glu Met Glu Val His Glu Glu Ser Lys His Phe Thr Arg
225                         230                    235              240
Tyr His Arg Pro


<210> 4513
<211> 545
<212> DNA
<213> Homo sapiens


<400> 4513
aagctttact acacagctac agtaatggag acagcaggta ccgctctaca gcaaaagacc
60
tgcatcaccg agtccacgca cacttgcctt gcagcttcat gtcagagagc agctgagcag
120
tcagcacctg cacccggggg ttgggccctg gggcttcctt cccagtccag cctctcagct
180
cctgtctgtg gcttagcacg tgcaccacag agccaaccag atcctctgta aactttggga
240
cttctctggc cttcacggga ccttctgtgg cagaaatcat tttcataatc atgagactct
300
tctcctcgga gtttcctttc aacaggtggg acatggatgc tgtgaactgc tcctgggaca
360
cgttctcact gggtcccttc gccttccctg tcaggtcgac cctccgcatg ccatcataca
420
gcctggtgac catctctggg ggaagagctt ccccgacgtg gttctgtagt gccttcagag
480
agaaggattt ggatgagaca ttcgggctgt ttttatctga tgacagagca tcaaacaatt
540
gatca
545


<210> 4514
<211> 122
<212> PRT
<213> Homo sapiens


<400> 4514
Met Val Thr Arg Leu Tyr Asp Gly Met Arg Arg Val Asp Leu Thr Gly
1               5                   10                      15
Lys Ala Lys Gly Pro Ser Glu Asn Val Ser Gln Glu Gln Phe Thr Ala
            20                  25                      30
Ser Met Ser His Leu Leu Lys Gly Asn Ser Glu Glu Lys Ser Leu Met
         35                  40                      45
Ile Met Lys Met Ile Ser Ala Thr Glu Gly Pro Val Lys Ala Arg Glu
    50                  55                      60
Val Gln Lys Phe Thr Glu Asp Leu Val Gly Ser Val Val His Val Leu
65                  70                      75                  80
Ser His Arg Gln Glu Leu Arg Gly Trp Thr Gly Lys Glu Ala Pro Gly
                85                  90                      95
Pro Asn Pro Arg Val Gln Val Leu Thr Ala Gln Leu Leu Ser Asp Met
```

```
              100              105                   110
Lys Leu Gln Gly Lys Cys Ala Trp Thr Arg
         115            120
```

<210> 4515
<211> 3207
<212> DNA
<213> Homo sapiens

<400> 4515
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ncaaacaacc actgggaggc actgtttccc ccccatcccg ccctgggcag ggcacgtccc
60
actcccccccg cgcggttgct gggaacccgg aggccgcccg ggcggagcgc ggagggcgcg
120
tcggaacctg gccggggccc tccacccgcg ccgtggtccc ggtggttgcg ccccgtggcg
180
agcgacgccg acaactttgc gatggagttt gtgcgggcgc tgtggctggg cctggcgctg
240
gcgctggggc cggggtccgc ggggggccac cctcagccgt gcggcgtcct ggcgcgcctc
300
gggggctccg tgcgcctggg cgccctcctg ccccgcgcgc ctctcgcccg cgcccgcgcc
360
cgcgccgccc tggcccgggc cgccctggcg ccgcggctgc cgcacaacct gagcttggag
420
ctggtggtcg ccgcgccccc cgcccgcgac cccgcctcgc tgacccgcgg cctgtgccag
480
gcgctggtgc ctccgggcgt ggcggccctg ctcgccttt ccgaggctcg gcccgagctg
540
ctgcagctgc acttcctggc ggcggccacc gagacccccg tgctcagcct gctgcggcgg
600
gaggcgcgcg cgcccctcgg agccccgaac ccattccacc tgcagctgca ctgggccagc
660
ccctggaga cgctgctgga tgtgctggtg gcggtgctgc aggcgcacgc ctgggaagac
720
gtcggcctgg ccctgtgccg cactcaggac cccggcggcc tggtggccct ctggacaagc
780
cgggctggcc ggcccccaca gctggtcctg gacctaagcc ggcgggacac gggagatgca
840
ggactgcggg cacgcctggc cccgatggcg cgccagtgg ggggtgaagc accggtaccc
900
gcggcggtcc tcctcggctg tgacatcgcc cgtgcccgtc gggtgctgga ggccgtacct
960
cccggccccc actggctgtt ggggacacca ctgccgccca aggccctgcc caccgcgggg
1020
ctgccaccag ggctgctggc gctgggcgag gtggcacgac ccccgctgga ggccgccatc
1080
catgacattg tgcaactggt ggcccgggcg ctgggcagtg cggcccaggt gcagccgaag
1140
cgagccctcc tcccgccccc ggtcaactgc ggggacctgc agccggccgg gcccgagtcc
1200
ccgggggcgct tcttggcacg gttcctggcc aacacgtcct tccagggccg cacgggcccc
1260
gtgtgggtga caggcagctc ccaggtacac atgtctcggc actttaaggt gtggagcctt
1320
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```
cgccgggacc cacggggcgc cccggcctgg gccacggtgg gcagctggcg gtacggccag
1380
ctggacttgg aaccgggagg tgcctctgca tggcccccgc ccccgcaggg tgcccaggtc
1440
cggcccaagc tgcgtgtggt aacgctgttg gaacacccat ttgtgtttgc ccgtgatcca
1500
gacgaagacg ggcagtgccc agcagggcag ctgtgcctgg accccggcac caacgactcg
1560
gccaccctgg acgcactgtt cgccgcgctg gccaacggct cagcgccccg tgccctgcgc
1620
aagtgctgct acggctactg cattgacctg ctggagcggc tggcggagga cacgcccttc
1680
gacttcgagc tgtacctcgt gggtgacggc aagtacggcg ccctgcggga cggccgctgg
1740
accggcctgg tcggggacct gctggccggc cgggcccaca tggcggtcac cagcttcagt
1800
atcaactccg cccgctcaca ggtggtggac ttcaccagcc ccttcttctc caccagcctg
1860
ggcatcatgg tgcgggcacg ggacacggcc tcacccatcg gtgcctttat gtggcccctg
1920
cactggtcca cgtggctggg cgtctttgcg gccctgcacc tcaccgcgct cttcctcacc
1980
gtgtacgagt ggcgtagccc ctacggcctc acgccacgtg gccgcaaccg cagcaccgtc
2040
ttctcctact cctcagccct caacctgtgc tacgccatcc tcttcagacg caccgtgtcc
2100
agcaagacgc ccaagtgccc cacgggccgc ctgctcatga acctctgggc catcttctgc
2160
ctgctggtgc tgtccagcta cacggccaac ctggctgccg tcatggtcgg ggacaagacc
2220
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2280
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2340
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2400
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2460
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2520
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2580
tacaagtcct ccggcttcat cgacctgctc cacgacaagt ggtacaagat ggtgccttgc
2640
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2700
ctcttcgtgt tgctgtgcct gggcctgggc agcgctctgc tcagctcgct gggcgagcac
2760
gccttcttcc gcctggcgct gccgcgcatc cgcaaggggga gcaggctgca gtactggctg
2820
cacaccagcc agaaaatcca ccgcgccctc aacacggagc accagagggg gtcgaaggag
2880
gagacggcag aggcggagcc caggtaagtg gtggtcgggg cggaccacga tgcaggacca
2940
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cccagaccca ccaccccacc agctcgcccc gaagccggcc gcggggtgca ggaggttccc
3000
ggaggtcccc cgcccacccc cggacgtgca caccgtggct ccctggttgt gcctgtcggc
3060
catcctctgc cgtcagcggc ctctgcagag gcccagggcg cgagacggct gccccggcgg
3120
acactgacca ggccggttcc gtccccagcg gccccgaggt ggagcagcag cagcagcagc
3180
aggaccagcc aacggctccg gagggct
3207

<210> 4516
<211> 901
<212> PRT
<213> Homo sapiens

<400> 4516
Met Glu Phe Val Arg Ala Leu Trp Leu Gly Leu Ala Leu Ala Leu Gly
 1   5   10   15
Pro Gly Ser Ala Gly Gly His Pro Gln Pro Cys Gly Val Leu Ala Arg
            20   25   30
Leu Gly Gly Ser Val Arg Leu Gly Ala Leu Leu Pro Arg Ala Pro Leu
        35   40   45
Ala Arg Ala Arg Ala Arg Ala Ala Leu Ala Arg Ala Ala Leu Ala Pro
    50   55   60
Arg Leu Pro His Asn Leu Ser Leu Glu Leu Val Val Ala Ala Pro Pro
65   70   75   80
Ala Arg Asp Pro Ala Ser Leu Thr Arg Gly Leu Cys Gln Ala Leu Val
                85   90   95
Pro Pro Gly Val Ala Ala Leu Leu Ala Phe Pro Glu Ala Arg Pro Glu
            100   105   110
Leu Leu Gln Leu His Phe Leu Ala Ala Ala Thr Glu Thr Pro Val Leu
            115   120   125
Ser Leu Leu Arg Arg Glu Ala Arg Ala Pro Leu Gly Ala Pro Asn Pro
    130   135   140
Phe His Leu Gln Leu His Trp Ala Ser Pro Leu Glu Thr Leu Leu Asp
145   150   155   160
Val Leu Val Ala Val Leu Gln Ala His Ala Trp Glu Asp Val Gly Leu
                165   170   175
Ala Leu Cys Arg Thr Gln Asp Pro Gly Gly Leu Val Ala Leu Trp Thr
            180   185   190
Ser Arg Ala Gly Arg Pro Pro Gln Leu Val Leu Asp Leu Ser Arg Arg
            195   200   205
Asp Thr Gly Asp Ala Gly Leu Arg Ala Arg Leu Ala Pro Met Ala Ala
    210   215   220
Pro Val Gly Gly Glu Ala Pro Val Pro Ala Ala Val Leu Leu Gly Cys
225   230   235   240
Asp Ile Ala Arg Ala Arg Arg Val Leu Glu Ala Val Pro Pro Gly Pro
            245   250   255
His Trp Leu Leu Gly Thr Pro Leu Pro Pro Lys Ala Leu Pro Thr Ala
            260   265   270
Gly Leu Pro Pro Gly Leu Leu Ala Leu Gly Glu Val Ala Arg Pro Pro
        275   280   285
Leu Glu Ala Ala Ile His Asp Ile Val Gln Leu Val Ala Arg Ala Leu

```
                290                      295                      300
      Gly Ser Ala Ala Gln Val Gln Pro Lys Arg Ala Leu Leu Pro Ala Pro
      305                      310                      315                      320
      Val Asn Cys Gly Asp Leu Gln Pro Ala Gly Pro Glu Ser Pro Gly Arg
                             325                      330                      335
      Phe Leu Ala Arg Phe Leu Ala Asn Thr Ser Phe Gln Gly Arg Thr Gly
                             340                      345                      350
      Pro Val Trp Val Thr Gly Ser Ser Gln Val His Met Ser Arg His Phe
                     355                      360                      365
      Lys Val Trp Ser Leu Arg Arg Asp Pro Arg Gly Ala Pro Ala Trp Ala
          370                      375                      380
      Thr Val Gly Ser Trp Arg Tyr Gly Gln Leu Asp Leu Glu Pro Gly Gly
      385                      390                      395                      400
      Ala Ser Ala Trp Pro Pro Pro Gln Gly Ala Gln Val Arg Pro Lys
                             405                      410                      415
      Leu Arg Val Val Thr Leu Leu Glu His Pro Phe Val Phe Ala Arg Asp
                     420                      425                      430
      Pro Asp Glu Asp Gly Gln Cys Pro Ala Gly Gln Leu Cys Leu Asp Pro
                     435                      440                      445
      Gly Thr Asn Asp Ser Ala Thr Leu Asp Ala Leu Phe Ala Ala Leu Ala
          450                      455                      460
      Asn Gly Ser Ala Pro Arg Ala Leu Arg Lys Cys Cys Tyr Gly Tyr Cys
      465                      470                      475                      480
      Ile Asp Leu Leu Glu Arg Leu Ala Glu Asp Thr Pro Phe Asp Phe Glu
                             485                      490                      495
      Leu Tyr Leu Val Gly Asp Gly Lys Tyr Gly Ala Leu Arg Asp Gly Arg
                     500                      505                      510
      Trp Thr Gly Leu Val Gly Asp Leu Leu Ala Gly Arg Ala His Met Ala
                     515                      520                      525
      Val Thr Ser Phe Ser Ile Asn Ser Ala Arg Ser Gln Val Val Asp Phe
          530                      535                      540
      Thr Ser Pro Phe Phe Ser Thr Ser Leu Gly Ile Met Val Arg Ala Arg
      545                      550                      555                      560
      Asp Thr Ala Ser Pro Ile Gly Ala Phe Met Trp Pro Leu His Trp Ser
                     565                      570                      575
      Thr Trp Leu Gly Val Phe Ala Ala Leu His Leu Thr Ala Leu Phe Leu
                     580                      585                      590
      Thr Val Tyr Glu Trp Arg Ser Pro Tyr Gly Leu Thr Pro Arg Gly Arg
                595                      600                      605
      Asn Arg Ser Thr Val Phe Ser Tyr Ser Ser Ala Leu Asn Leu Cys Tyr
          610                      615                      620
      Ala Ile Leu Phe Arg Arg Thr Val Ser Ser Lys Thr Pro Lys Cys Pro
      625                      630                      635                      640
      Thr Gly Arg Leu Leu Met Asn Leu Trp Ala Ile Phe Cys Leu Leu Val
                             645                      650                      655
      Leu Ser Ser Tyr Thr Ala Asn Leu Ala Ala Val Met Val Gly Asp Lys
                     660                      665                      670
      Thr Phe Glu Glu Leu Ser Gly Ile His Asp Pro Lys Leu His His Pro
                     675                      680                      685
      Ala Gln Gly Phe Arg Phe Gly Thr Val Trp Glu Ser Ser Ala Glu Ala
                     690                      695                      700
      Tyr Ile Lys Lys Ser Phe Pro Asp Met His Ala His Met Arg Arg His
      705                      710                      715                      720
      Ser Ala Pro Thr Thr Pro Arg Gly Val Ala Met Leu Thr Ser Asp Pro
```

                                  3712

```
                         725                    730                    735
     Pro Lys Leu Asn Ala Phe Ile Met Asp Lys Ser Leu Leu Asp Tyr Glu
                     740                    745                    750
     Val Ser Ile Asp Ala Asp Cys Lys Leu Leu Thr Val Gly Lys Pro Phe
                     755                    760                    765
     Ala Ile Glu Gly Tyr Gly Ile Gly Leu Pro Gln Asn Ser Pro Leu Thr
                     770                    775                    780
     Ser Asn Leu Ser Glu Phe Ile Ser Arg Tyr Lys Ser Ser Gly Phe Ile
     785                     790                    795                    800
     Asp Leu Leu His Asp Lys Trp Tyr Lys Met Val Pro Cys Gly Lys Arg
                     805                    810                    815
     Val Phe Ala Val Thr Glu Thr Leu Gln Met Ser Ile Tyr His Phe Ala
                     820                    825                    830
     Gly Leu Phe Val Leu Leu Cys Leu Gly Leu Gly Ser Ala Leu Leu Ser
                     835                    840                    845
     Ser Leu Gly Glu His Ala Phe Phe Arg Leu Ala Leu Pro Arg Ile Arg
         850                    855                    860
     Lys Gly Ser Arg Leu Gln Tyr Trp Leu His Thr Ser Gln Lys Ile His
     865                    870                    875                    880
     Arg Ala Leu Asn Thr Glu Pro Pro Glu Gly Ser Lys Glu Glu Thr Ala
                     885                    890                    895
     Glu Ala Glu Pro Arg
                     900
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```
<210>  4517
<211>  2275
<212>  DNA
<213>  Homo sapiens
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<400>  4517
actagttcta gatcgcgagc ggagctgctg actgcattct tctctgccac tgcggatgct
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gcctccccgt ttccagcctg taagcccgtt gtggtggtga gctccctgct gctgcaggag
120
gaggagcccc tggctggggg gaagccgggt gcggacggtg gcagcctgga ggccgtgcgg
180
ctggggccct cgtcaggcct cctagtggac tggctggaaa tgctggaccc cgaggtggtc
240
agcagctgcc ccgacctgca gctcaggctg ctcttctccc ggaggaaggg caaaggtcag
300
gcccaggtgc cctcgttccg tccctacctc ctgaccctct tcacgcatca gtccagctgg
360
cccacactgc accagtgcat ccgagtcctg ctgggcaaga gccgggaaca gaggttcgac
420
ccctctgcct ctctggactt cctctgggcc tgcatccatg ttcctcgcat ctggcagggg
480
cgggaccagc gcaccccgca gaagcggcgg gaggagctgg tgctgcgggt ccagggcccg
540
gagctcatca gcctggtgga gctgatcctg gccgaggcgg agacgcggag ccaggacggg
600
gacacagccg cctgcagcct catccaggcc cggctgcccc tgctgctcag ctgctgctgt
660
ggggacgatg agagtgtcag gaaggtgacg gagcacctgt caggctgcat ccagcagtgg
720
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ggagacagcg tgctgggcag gcgctgccga gaccttctcc tgcagctcta cctacagcgg
780
ccggagctgc gggtgcccgt gcctgaggtc ctactgcaca gcgaaggggc tgccagcagc
840
agcgtctgca agctggacgg actcatccac cgcttcatca cgctccttgc ggacaccagc
900
gactcccggg cgttggagaa ccgaggggcg gatgccagca tggcctgccg gaagctggcg
960
gtggcgcacc cgctgctgct gctcaggcac ctgcccatga tcgcggcgct cctgcacggc
1020
cgcacccacc tcaacttcca ggagttccgg cagcagaacc acctgagctg cttcctgcac
1080
gtgctgggcc tgctggagct gctgcagccg cacgtgttcc gcagcgagca ccaggggggcg
1140
ctgtgggact gccttctgtc cttcatccgc ctgctgctga attacaggaa gtcctcccgc
1200
catctggctg ccttcatcaa caagtttgtg cagttcatcc ataagtacat tacctacaat
1260
gccccagcag ccatctcctt cctgcagaag cacgccgacc cgctccacga cctgtccttc
1320
gacaacagtg acctggtgat gctgaaatcc ctccttgcag ggctcagcct gcccagcagg
1380
gacgacagga ccgaccgagg cctggacgaa gagggcgagg aggagagctc agccggctcc
1440
ttgcccctgg tcagcgtctc cctgttcacc cctctgaccg cggccgagat ggccccctac
1500
atgaaacggc tttcccgggg ccaaacggtg gagggtgagt caggccctgc ttcacccacg
1560
ccagatctgc tggaggttct gagtgacata gacgagatgt cccggcggag acccgagatc
1620
ctgagcttct tctcgaccaa cctgcagcgg ctgatgagct cggccgagga gtgttgccgc
1680
aacctcgcct tcagcctggc cctgcgctcc atgcagaaca gccccagcat tgcagccgct
1740
ttcctgccca cgttcatgta ctgcctgggc agccaggact ttgaggtggt gcagacggcc
1800
ctccggaacc tgcctgagta cgctctcctg tgccaagagc acgcggctgt gctgctccac
1860
cgggccttcc tggtgggcat gtacggccag atggacccca gcgcgcagat ctccgaggcc
1920
ctgaggatcc tgcatatgga ggccgtgatg tgagcctgtg gcagccgacc cccctccaag
1980
ccccggcccg tcccgtcccc ggggatcctc gaggcaaagc ccaggaagcg tgggcgttgc
2040
tggtctgtcc gaggaggtga gggcgccgag ccctgaggcc aggcaggccc aggagcaata
2100
ctccgagccc tggggtggct ccgggccggc cgctggcatc aggggccgtc cagcaagccc
2160
tcattcacct tctgggccac agccctgccg cggagcggcg gatccccccg ggcatggcct
2220
gggctggttt tgaatgaaac gacctgaact gtcaaaaaaa aaaaaaaaaa aaaaa
2275
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<210> 4518

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<211> 650
<212> PRT
<213> Homo sapiens

<400> 4518
Thr Ser Ser Arg Ser Arg Ala Glu Leu Leu Thr Ala Phe Phe Ser Ala
1               5                   10                  15
Thr Ala Asp Ala Ala Ser Pro Phe Pro Ala Cys Lys Pro Val Val Val
            20                  25                  30
Val Ser Ser Leu Leu Leu Gln Glu Glu Glu Pro Leu Ala Gly Gly Lys
            35                  40                  45
Pro Gly Ala Asp Gly Gly Ser Leu Glu Ala Val Arg Leu Gly Pro Ser
    50                  55                  60
Ser Gly Leu Leu Val Asp Trp Leu Glu Met Leu Asp Pro Glu Val Val
65                  70                  75                  80
Ser Ser Cys Pro Asp Leu Gln Leu Arg Leu Leu Phe Ser Arg Arg Lys
            85                  90                  95
Gly Lys Gly Gln Ala Gln Val Pro Ser Phe Arg Pro Tyr Leu Leu Thr
            100                 105                 110
Leu Phe Thr His Gln Ser Ser Trp Pro Thr Leu His Gln Cys Ile Arg
        115                 120                 125
Val Leu Leu Gly Lys Ser Arg Glu Gln Arg Phe Asp Pro Ser Ala Ser
        130                 135                 140
Leu Asp Phe Leu Trp Ala Cys Ile His Val Pro Arg Ile Trp Gln Gly
145                 150                 155                 160
Arg Asp Gln Arg Thr Pro Gln Lys Arg Arg Glu Glu Leu Val Leu Arg
                165                 170                 175
Val Gln Gly Pro Glu Leu Ile Ser Leu Val Glu Leu Ile Leu Ala Glu
            180                 185                 190
Ala Glu Thr Arg Ser Gln Asp Gly Asp Thr Ala Ala Cys Ser Leu Ile
        195                 200                     205
Gln Ala Arg Leu Pro Leu Leu Leu Ser Cys Cys Cys Gly Asp Asp Glu
    210                 215                 220
Ser Val Arg Lys Val Thr Glu His Leu Ser Gly Cys Ile Gln Gln Trp
225                 230                 235                 240
Gly Asp Ser Val Leu Gly Arg Arg Cys Arg Asp Leu Leu Leu Gln Leu
                245                 250                 255
Tyr Leu Gln Arg Pro Glu Leu Arg Val Pro Val Pro Glu Val Leu Leu
            260                 265                 270
His Ser Glu Gly Ala Ala Ser Ser Ser Val Cys Lys Leu Asp Gly Leu
        275                 280                 285
Ile His Arg Phe Ile Thr Leu Leu Ala Asp Thr Ser Asp Ser Arg Ala
        290                 295                 300
Leu Glu Asn Arg Gly Ala Asp Ala Ser Met Ala Cys Arg Lys Leu Ala
305                 310                 315                 320
Val Ala His Pro Leu Leu Leu Leu Arg His Leu Pro Met Ile Ala Ala
            325                 330                 335
Leu Leu His Gly Arg Thr His Leu Asn Phe Gln Glu Phe Arg Gln Gln
            340                 345                 350
Asn His Leu Ser Cys Phe Leu His Val Leu Gly Leu Leu Glu Leu Leu
        355                 360                 365
Gln Pro His Val Phe Arg Ser Glu His Gln Gly Ala Leu Trp Asp Cys
    370                 375                 380
Leu Leu Ser Phe Ile Arg Leu Leu Leu Asn Tyr Arg Lys Ser Ser Arg
```

```
385                     390                     395                     400
His Leu Ala Ala Phe Ile Asn Lys Phe Val Gln Phe Ile His Lys Tyr
            405                     410                     415
Ile Thr Tyr Asn Ala Pro Ala Ala Ile Ser Phe Leu Gln Lys His Ala
            420                     425                     430
Asp Pro Leu His Asp Leu Ser Phe Asp Asn Ser Asp Leu Val Met Leu
            435                     440                     445
Lys Ser Leu Leu Ala Gly Leu Ser Leu Pro Ser Arg Asp Asp Arg Thr
        450                     455                     460
Asp Arg Gly Leu Asp Glu Glu Gly Glu Glu Glu Ser Ser Ala Gly Ser
465                     470                     475                     480
Leu Pro Leu Val Ser Val Ser Leu Phe Thr Pro Leu Thr Ala Ala Glu
                    485                     490                     495
Met Ala Pro Tyr Met Lys Arg Leu Ser Arg Gly Gln Thr Val Glu Gly
            500                     505                     510
Glu Ser Gly Pro Ala Ser Pro Thr Pro Asp Leu Leu Glu Val Leu Ser
        515                     520                     525
Asp Ile Asp Glu Met Ser Arg Arg Arg Pro Glu Ile Leu Ser Phe Phe
        530                     535                     540
Ser Thr Asn Leu Gln Arg Leu Met Ser Ser Ala Glu Glu Cys Cys Arg
545                     550                     555                     560
Asn Leu Ala Phe Ser Leu Ala Leu Arg Ser Met Gln Asn Ser Pro Ser
                    565                     570                     575
Ile Ala Ala Ala Phe Leu Pro Thr Phe Met Tyr Cys Leu Gly Ser Gln
            580                     585                     590
Asp Phe Glu Val Val Gln Thr Ala Leu Arg Asn Leu Pro Glu Tyr Ala
        595                     600                     605
Leu Leu Cys Gln Glu His Ala Ala Val Leu Leu His Arg Ala Phe Leu
        610                     615                     620
Val Gly Met Tyr Gly Gln Met Asp Pro Ser Ala Gln Ile Ser Glu Ala
625                     630                     635                     640
Leu Arg Ile Leu His Met Glu Ala Val Met
                    645                     650
```

```
<210> 4519
<211> 2326
<212> DNA
<213> Homo sapiens

<400> 4519
gacagagtgc agccttttcc tcccctaata gaaaagccat tgccctcttt tcctccccta
60
atagaaaagc cattgccctc ttttcctcca cccttaagaa gacctgcatc tgttggacca
120
acagacaact atccggctta cggccagggg agccctgca gctgcacaga accagtttct
180
tatgtatctg gcggtaattg ggaaagcttc tgagaaagtc catggggccg atgtatggga
240
gatgaatgtg gtcccggagg catccaaacg agggctgtgt ggtgtgctca tgtggaggga
300
tggactacac tgcatactaa ctgtaagcag gccgagagac ccaataacca gcagaattgt
360
ttcaaagttt gcgattggca caaagagttg tacgactgga gactgggacc ttggaatcag
420
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tgtcagcccg tgatttcaaa aagcctagag aaacctcttg agtgcattaa gggggaagaa
480
ggtattcagg tgagggagat agcgtgcatc cagaaagaca aagacattcc tgcggaggat
540
atcatctgtg agtactttga gcccaagcct ctcctggagc aggcttgcct cattccttgc
600
cagcaagatt gcatcgtgtc tgaattttct gcctggtccg aatgctccaa gacctgcggc
660
agcgggctcc agcaccggac gcgtcatgtg gtggcgcccc cgcagttcgg aggctctggc
720
tgtccaaacc tgacggagtt ccaggtgtgc caatccagtc catgcgaggc cgaggagctc
780
aggtacagcc tgcatgtggg gccctggagc acctgctcaa tgccccactc ccgacaagta
840
agacaagcaa ggagacgcgg gaagaataaa gaacgggaaa aggaccgcag caaaggagta
900
aaggatccag aagcccgcga gcttattaag aaaaagagaa acagaaacag gcagaacaga
960
caagagaaca aatattggga catccagatt ggatatcaga ccagagaggt tatgtgcatt
1020
aacaagacgg ggaaagctgc tgatttaagc ttttgccagc aagagaagct tccaatgacc
1080
ttccagtcct gtgtgatcac caaagagtgc caggtttccg agtggtcaga gtggagcccc
1140
tgctcaaaaa catgccatga catggtgtcc cctgcaggca ctcgtgtaag gacacgaacc
1200
atcaggcagt ttcccattgg cagtgaaaag gagtgtccag aatttgaaga aaaagaaccc
1260
tgtttgtctc aaggagatgg agttgtcccc tgtgccacgt atggctggag aactacagag
1320
tggactgagt gccgtgtgga ccctttgctc agtcagcagg acaagaggcg cggcaaccag
1380
acggccctct gtggagggggg catccagacc cgagaggtgt actgcgtgca ggccaacgaa
1440
aacctcctct cacaattaag tacccacaag aacaaagaag cctcaaagcc aatggactta
1500
aaattatgca ctggacctat ccctaatact acacagctgt gccacattcc ttgtccaact
1560
gaatgtgaag tttcaccttg gtcagcttgg ggaccttgta cttatgaaaa ctgtaatgat
1620
ccgcaaggga aaaaaggctt caaactgagg aagcggcgca ttaccaatga gcccactgga
1680
ggctctgggt taaccggaaa ctgccctcac ttactggaag ccattccctg tgaagagcct
1740
gcctgttatg actggaaagc ggtgagactg ggagactgcg agccagataa cggaaaggag
1800
tgtggtccag gcacgcaagt tcaagaggtt gtgtgcatca acagtgatgg agaagaagtt
1860
gacagacagc tgtgcagaga tgccatcttc cccatccctg tggcctgtga tgccccatgc
1920
ccgaaagact gtgtgctcag cacatggtct acgtggtcct cctgctcaca cacctgctca
1980
gggaaaacga cagaagggaa acagatacga gcacgatcca ttctggccta tgcgggtgaa
2040
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gaaggtgagt cgccagcttc agacgccatc taggttcgtt tcaaaagtta gtgtgcatct
2100

tttttgtgta gcctggaaaa gatgatattc tatgaaagtc aacaaccaga aattcagcca
2160

tccaagattt aatatctgtt gatgtgttga gcaatttgat tctgtccccc aaaattaatc
2220

ttgaaaatgg atctctaaca aaggagaaag acttttaaa agtgaactca ttttgctttt
2280

tcctaccacc ttaatatata tttaactctt tgctccaaaa aaaaaa
2326

<210> 4520
<211> 617
<212> PRT
<213> Homo sapiens

<400> 4520
Pro Trp Gly Arg Cys Met Gly Asp Glu Cys Gly Pro Gly Gly Ile Gln
1   5   10   15
Thr Arg Ala Val Trp Cys Ala His Val Glu Gly Trp Thr Thr Leu His
            20   25   30
Thr Asn Cys Lys Gln Ala Glu Arg Pro Asn Asn Gln Gln Asn Cys Phe
        35   40   45
Lys Val Cys Asp Trp His Lys Glu Leu Tyr Asp Trp Arg Leu Gly Pro
    50   55   60
Trp Asn Gln Cys Gln Pro Val Ile Ser Lys Ser Leu Glu Lys Pro Leu
65   70   75   80
Glu Cys Ile Lys Gly Glu Glu Gly Ile Gln Val Arg Glu Ile Ala Cys
                85   90   95
Ile Gln Lys Asp Lys Asp Ile Pro Ala Glu Asp Ile Ile Cys Glu Tyr
            100   105   110
Phe Glu Pro Lys Pro Leu Leu Glu Gln Ala Cys Leu Ile Pro Cys Gln
        115   120   125
Gln Asp Cys Ile Val Ser Glu Phe Ser Ala Trp Ser Glu Cys Ser Lys
        130   135   140
Thr Cys Gly Ser Gly Leu Gln His Arg Thr Arg His Val Val Ala Pro
145   150   155   160
Pro Gln Phe Gly Gly Ser Gly Cys Pro Asn Leu Thr Glu Phe Gln Val
            165   170   175
Cys Gln Ser Ser Pro Cys Glu Ala Glu Glu Leu Arg Tyr Ser Leu His
        180   185   190
Val Gly Pro Trp Ser Thr Cys Ser Met Pro His Ser Arg Gln Val Arg
        195   200   205
Gln Ala Arg Arg Arg Gly Lys Asn Lys Glu Arg Glu Lys Asp Arg Ser
    210   215   220
Lys Gly Val Lys Asp Pro Glu Ala Arg Glu Leu Ile Lys Lys Lys Arg
225   230   235   240
Asn Arg Asn Arg Gln Asn Arg Gln Glu Asn Lys Tyr Trp Asp Ile Gln
                245   250   255
Ile Gly Tyr Gln Thr Arg Glu Val Met Cys Ile Asn Lys Thr Gly Lys
            260   265   270
Ala Ala Asp Leu Ser Phe Cys Gln Gln Glu Lys Leu Pro Met Thr Phe
        275   280   285
Gln Ser Cys Val Ile Thr Lys Glu Cys Gln Val Ser Glu Trp Ser Glu

```
        290                    295                    300
Trp Ser Pro Cys Ser Lys Thr Cys His Asp Met Val Ser Pro Ala Gly
305                    310                    315                    320
Thr Arg Val Arg Thr Arg Thr Ile Arg Gln Phe Pro Ile Gly Ser Glu
                325                    330                    335
Lys Glu Cys Pro Glu Phe Glu Glu Lys Glu Pro Cys Leu Ser Gln Gly
                340                    345                    350
Asp Gly Val Val Pro Cys Ala Thr Tyr Gly Trp Arg Thr Thr Glu Trp
                355                    360                    365
Thr Glu Cys Arg Val Asp Pro Leu Leu Ser Gln Gln Asp Lys Arg Arg
                370                    375                    380
Gly Asn Gln Thr Ala Leu Cys Gly Gly Gly Ile Gln Thr Arg Glu Val
385                    390                    395                    400
Tyr Cys Val Gln Ala Asn Glu Asn Leu Leu Ser Gln Leu Ser Thr His
                405                    410                    415
Lys Asn Lys Glu Ala Ser Lys Pro Met Asp Leu Lys Leu Cys Thr Gly
                420                    425                    430
Pro Ile Pro Asn Thr Thr Gln Leu Cys His Ile Pro Cys Pro Thr Glu
                435                    440                    445
Cys Glu Val Ser Pro Trp Ser Ala Trp Gly Pro Cys Thr Tyr Glu Asn
        450                    455                    460
Cys Asn Asp Pro Gln Gly Lys Lys Gly Phe Lys Leu Arg Lys Arg Arg
465                    470                    475                    480
Ile Thr Asn Glu Pro Thr Gly Gly Ser Gly Leu Thr Gly Asn Cys Pro
                485                    490                    495
His Leu Leu Glu Ala Ile Pro Cys Glu Glu Pro Ala Cys Tyr Asp Trp
                500                    505                    510
Lys Ala Val Arg Leu Gly Asp Cys Glu Pro Asp Asn Gly Lys Glu Cys
                515                    520                    525
Gly Pro Gly Thr Gln Val Gln Glu Val Val Cys Ile Asn Ser Asp Gly
        530                    535                    540
Glu Glu Val Asp Arg Gln Leu Cys Arg Asp Ala Ile Phe Pro Ile Pro
545                    550                    555                    560
Val Ala Cys Asp Ala Pro Cys Pro Lys Asp Cys Val Leu Ser Thr Trp
                565                    570                    575
Ser Thr Trp Ser Ser Cys Ser His Thr Cys Ser Gly Lys Thr Thr Glu
                580                    585                    590
Gly Lys Gln Ile Arg Ala Arg Ser Ile Leu Ala Tyr Ala Gly Glu Glu
        595                    600                    605
Gly Glu Ser Pro Ala Ser Asp Ala Ile
        610                    615
```

<210> 4521
<211> 1071
<212> DNA
<213> Homo sapiens

<400> 4521
nagattccta taaaggatca tgaattagat gggtagtaga tttatccaca atgataaaga
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tcagaagaaa tgaaataatg ccttcaaacg actgaggaaa aataattatt aacctataat
120
ttataccaat ataaacaatt actcaggaaa aaaagaaaat aaaaacttgc aagggctaaa
180

```
·ataacttgct taccaccaaa gatgcttgct ctaagaactg tgaagggatt caagaggaaa
240
agtacaccca gagagggctc atacatgtcc tctccccctc ctcctccacc accaggacac
300
acagaaactg cctcctcttt tcagccctct cccttctcag ctgactttga gctacaaata
360
tcccttctct acttggagag ccccatttca ttacaggaat ttgctttgag ttttattatc
420
attttagtct atgtcttaga ttgggctgct ataacaaggt gccataggct gagcggctta
480
aacaacaaac actcatatcc cacagttaca gaggctgaga agcctggggt caaggtacca
540
gcatggtctg attctgttct ggaggctggg aaatccaaga tggaagcact ggtaggtttg
600
gtgtctggga gggcttctct ctgcttccaa gatggtgcct tgtcgctgca tcttccagag
660
ggaaggaatg ctgtgtcctt gcagcacaga agaaacacat ctgaaaagaa atcaagcaga
720
aaagttgaaa ataaagagat ggaatatata tatgaaaact actacatata ggaagggatg
780 ·
tagcaaagac acagagagaa .tataatttaa ggcaaaaagc ttcaatagga tttcaaagca
840
aaccttgcat actaaaaaaa ggaaaccaaa aataaaccaa aagaaaccga aaaccatgaa
900 ·
cttgcaggag aattttccaa agccgtaatt ataatgagag tgtttttaag tctataagaa
960
attaatatat caaacaaata aagattaata agaatttgga atttgtatga aatggcaaag ·
1020
gaaaagccag gcgtggtggc ttacgcctgt aatgccagca ctttgggagg c·
1071
```

```
<210> 4522
<211> 189
<212> PRT
<213> Homo sapiens
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<400> 4522
Met Leu Ala Leu Arg Thr Val Lys Gly Phe Lys Arg Lys Ser Thr Pro
1               5                   10              15
Arg Glu Gly Ser Tyr Met Ser Ser Pro Pro Pro Pro Pro Pro Pro Gly
            20              25              30
His Thr Glu Thr Ala Ser Ser Phe Gln Pro Ser Pro Phe Ser Ala Asp
            35              40              45
Phe Glu Leu Gln Ile Ser Leu Leu Tyr Leu Glu Ser Pro Ile Ser Leu
    50              55              60
Gln Glu Phe Ala Leu Ser Phe Ile Ile Ile Leu Val Tyr Val Leu Asp
65              70              75              80
Trp Ala Ala Ile Thr Arg Cys His Arg Leu Ser Gly Leu Asn Asn Lys
                85              90              95
His Ser Tyr Pro Thr Val Thr Glu Ala Glu Lys Pro Gly Val Lys Val
            100             105             110
Pro Ala Trp Ser Asp Ser Val Leu Glu Ala Gly Lys Ser Lys Met Glu
        115             120             125
Ala Leu Val Gly Leu Val Ser Gly Arg Ala Ser Leu Cys Phe Gln Asp
```

```
            130              135              140
Gly Ala Leu Ser Leu His Leu Pro Glu Gly Arg Asn Ala Val Ser Leu
145              150              155              160
Gln His Arg Arg Asn Thr Ser Glu Lys Lys Ser Ser Arg Lys Val Glu
                 165              170              175
Asn Lys Glu Met Glu Tyr Ile Tyr Glu Asn Tyr Tyr Ile
             180              185
```

```
<210> 4523
<211> 1022
<212> DNA
<213> Homo sapiens
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<400> 4523
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gacactccca ggctgagtct cntcttggtg attctgggcg tcatcttcat gaatggcaac
120
cgtgccagcg aggctgtcct ctgggaggca ctacgcaaga tgggactgcg ccctggggtg
180
aggcacccat tcctcggcga tctgaggaag ctcatcacag atgactttgt gaagcagaag
240
tacctggaat acaagaagat ccccaacagc aacccacctg agtatgaatt cctctggggc
300
ctgcgagccc gccatgagac cagcaagatg agggtcctga gattcatcgc ccagaatcag
360
aaccgagacc cccgggaatg gaaggctcat ttcttggagg ctgtggatga tgctttcaag
420
acaatggatg tggatatggc cgaggaacat gccagggccc agatgagggc ccagatgaat
480
atcggggatg aagcgctgat tggacggtgg agctgggatg acatacaagt cgagctcctg
540
acctgggatg aggacggaga ttttggcgat gcctgggcca ggatcccctt tgctttctgg
600
gccagatacc atcagtacat tctgaatagc aaccgtgcca acaggagggc cacgtggaga
660
gctggcgtca gcagtggcac caatggaggg gccagcacca gcgtcctaga tggccccagc
720
accagctcca ccatccggac cagaaatgct gccagagctg gcgccagctt cttctcctgg
780
atccagtagg agtttcggca ccgttgacga actgcagcga tcttactggc caagccagag
840
cgcctcctct cagattcctt ctcgacacag caccctaggc ggcttcttcc tgtcagtcgg
900
aggtggcatg caagatgaag ctctctttgc tcttcctgct ttcattttgt gcttttcctt
960
gtgttttcat gttttgggta tcagtgttac attaaagttg caaaattaaa aaaaaaaaaa
1020
aa
1022
```

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<210> 4524
<211> 262
<212> PRT
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<213> Homo sapiens

<400> 4524
Ala Leu Tyr Ile Leu Val Cys Thr Arg Asp Ser Ser Ala Arg Leu Leu
 1   5   10   15
Gly Lys Thr Lys Asp Thr Pro Arg Leu Ser Leu Xaa Leu Val Ile Leu
            20   25   30
Gly Val Ile Phe Met Asn Gly Asn Arg Ala Ser Glu Ala Val Leu Trp
            35   40   45
Glu Ala Leu Arg Lys Met Gly Leu Arg Pro Gly Val Arg His Pro Phe
        50   55   60
Leu Gly Asp Leu Arg Lys Leu Ile Thr Asp Asp Phe Val Lys Gln Lys
65   70   75   80
Tyr Leu Glu Tyr Lys Lys Ile Pro Asn Ser Asn Pro Pro Glu Tyr Glu
                85   90   95
Phe Leu Trp Gly Leu Arg Ala Arg His Glu Thr Ser Lys Met Arg Val
            100   105   110
Leu Arg Phe Ile Ala Gln Asn Gln Asn Arg Asp Pro Arg Glu Trp Lys
        115   120   125
Ala His Phe Leu Glu Ala Val Asp Asp Ala Phe Lys Thr Met Asp Val
    130   135   140
Asp Met Ala Glu Glu His Ala Arg Ala Gln Met Arg Ala Gln Met Asn
145   150   155   160
Ile Gly Asp Glu Ala Leu Ile Gly Arg Trp Ser Trp Asp Asp Ile Gln
                165   170   175
Val Glu Leu Leu Thr Trp Asp Glu Asp Gly Asp Phe Gly Asp Ala Trp
            180   185   190
Ala Arg Ile Pro Phe Ala Phe Trp Ala Arg Tyr His Gln Tyr Ile Leu
        195   200   205
Asn Ser Asn Arg Ala Asn Arg Arg Ala Thr Trp Arg Ala Gly Val Ser
    210   215   220
Ser Gly Thr Asn Gly Gly Ala Ser Thr Ser Val Leu Asp Gly Pro Ser
225   230   235   240
Thr Ser Ser Thr Ile Arg Thr Arg Asn Ala Ala Arg Ala Gly Ala Ser
                245   250   255
Phe Phe Ser Trp Ile Gln
                260

<210> 4525
<211> 1731
<212> DNA
<213> Homo sapiens

<400> 4525
nngaaccatg gcattctcca ggctctgacc acagaagctt atgaatggga gccacgtgtt
60
gtgagtacag aggtggtcag agcccaagaa gaatgggaag ctgtggacac catccagcca
120
gagacaggga gccaagctag ctcagagcag cctgggcagc taatctcctt cagtgaggcc
180
ctgcagcact tccagactgt ggacctttcc cccttcaaga aaagaatcca gccaactatt
240
cgaaggactg ggctcgccgc cctccgacac tacctcttcg ggcctccaaa gctccaccag
300

3722

cgccttcggg aagaaaggga cttggtcctg accattgctc agtgtggcct ggatagccaa
360
gacccagtgc atggccgagt cctccagacc atctataaga agctgaccgg ctccaagttt
420
gactgtgccc ttcatggaaa ccactgggag gacctgggct ttcagggagc gaatccagcc
480
acagacctga gaggcgcagg cttccttgcc ctcctgcatc tgctctacct agtgatggac
540
tcaaagacct tgccgatggc gcaggagatt ttccgcctgt ctcgtcacca catccagcaa
600
ttcccttct gtttgatgtc cgtgaacatc acccacattg ccatccaggc cttgagagag
660
gagtgtctct ccagagagtg taatcggcag cagaaggtca tccccgtggt gaacagcttc
720
tatgccgcca cattcctcca cctcgcacat gtctggagga cacagcggaa gaccatctca
780
gactcgggct ttgtcctcaa aggtgtgctc tttcttctgg ggaggcctag gctgaatgca
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cagtgtccca ggtccagaga gcccaaggtg gttgctagac tggttttggc tgcagttctt
900
ccccatccac actttctcaa attccagctt accaaaatct ccatcaccca ccccctggag
960
tctgctagtt ctcctttctc tgccctgact gtcgcccttt tctggtctta tacttatgac
1020
aagcatatat tctgatcaaa aattgggagc cagggtccaa tagttggact attcaaagtt
1080
gcaattgtgc agacaaggta gagtgtgtgg tccctgtggc tgtagctggc tccctagcct
1140
acctctctgg tgatctctcc atctgaggct ccttcacttt ctctccatgg gatagggstt
1200
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1260
ctcaagcctt ctgctcccca attctctctg ttgcagagtt ggaagtattg gccaagaaga
1320
gcccacggcg ggctgctcaa gaccctggag ctgtacttgg ccagggtgtc aaagggacag
1380
gcctccttgt tgggagcaca gaagtgctat gggccagaag cccctccctt caaggatctc
1440
accttcacag gtgagagtga cctgcagtct cactcatccg aaggcgtatg gctgatctga
1500
cctccgagat gaatggaggc ttaaaggctg agctgcaggg gctttcaggg ggtcagtgga
1560
gccatgtcag gagcctggcc aggccgcacc ccttgctgtc tcagcagatg ggatatagga
1620
agctcctggg cttagctgtg ggaagccaag taccctcacc ggcatgggac atgaggggca
1680
gctagacttc acccccttcc cgcagacctg cctccagagc aaggagaatt c
1731

<210> 4526
<211> 344
<212> PRT
<213> Homo sapiens

<400> 4526
Xaa Asn His Gly Ile Leu Gln Ala Leu Thr Thr Glu Ala Tyr Glu Trp
1   5   10   15
Glu Pro Arg Val Val Ser Thr Glu Val Val Arg Ala Gln Glu Glu Trp
            20   25   30
Glu Ala Val Asp Thr Ile Gln Pro Glu Thr Gly Ser Gln Ala Ser Ser
        35   40   45
Glu Gln Pro Gly Gln Leu Ile Ser Phe Ser Glu Ala Leu Gln His Phe
    50   55   60
Gln Thr Val Asp Leu Ser Pro Phe Lys Lys Arg Ile Gln Pro Thr Ile
65   70   75   80
Arg Arg Thr Gly Leu Ala Ala Leu Arg His Tyr Leu Phe Gly Pro Pro
            85   90   95
Lys Leu His Gln Arg Leu Arg Glu Glu Arg Asp Leu Val Leu Thr Ile
            100   105   110
Ala Gln Cys Gly Leu Asp Ser Gln Asp Pro Val His Gly Arg Val Leu
            115   120   125
Gln Thr Ile Tyr Lys Lys Leu Thr Gly Ser Lys Phe Asp Cys Ala Leu
    130   135   140
His Gly Asn His Trp Glu Asp Leu Gly Phe Gln Gly Ala Asn Pro Ala
145   150   155   160
Thr Asp Leu Arg Gly Ala Gly Phe Leu Ala Leu Leu His Leu Leu Tyr
            165   170   175
Leu Val Met Asp Ser Lys Thr Leu Pro Met Ala Gln Glu Ile Phe Arg
            180   185   190
Leu Ser Arg His His Ile Gln Gln Phe Pro Phe Cys Leu Met Ser Val
            195   200   205
Asn Ile Thr His Ile Ala Ile Gln Ala Leu Arg Glu Glu Cys Leu Ser
    210   215   220
Arg Glu Cys Asn Arg Gln Gln Lys Val Ile Pro Val Val Asn Ser Phe
225   230   235   240
Tyr Ala Ala Thr Phe Leu His Leu Ala His Val Trp Arg Thr Gln Arg
            245   250   255
Lys Thr Ile Ser Asp Ser Gly Phe Val Leu Lys Gly Val Leu Phe Leu
            260   265   270
Leu Gly Arg Pro Arg Leu Asn Ala Gln Cys Pro Arg Ser Arg Glu Pro
            275   280   285
Lys Val Val Ala Arg Leu Val Leu Ala Ala Val Leu Pro His Pro His
    290   295   300
Phe Leu Lys Phe Gln Leu Thr Lys Ile Ser Ile Thr His Pro Leu Glu
305   310   315   320
Ser Ala Ser Ser Pro Phe Ser Ala Leu Thr Val Ala Leu Phe Trp Ser
            325   330   335
Tyr Thr Tyr Asp Lys His Ile Phe
            340

<210> 4527
<211> 885
<212> DNA
<213> Homo sapiens

<400> 4527
nnttttttttt tttttttttt tttttttttt tttttttttt tttttttttg cagagacatg
60

3724

```
gctgcattta ttgttcccag cccggcgaga aggtgttccc agaaaggttc cttgggtcac
120
ctgcccaccc agccttggct ctgggctgcc atgtccccac gggggcagga gagaggcaca
180
agtcacagtc aggcaaggga gcctcagcgt cctgggcggt ggctgttggg gtccctccag
240
tcttcacctg ggaccctcgg ccaggctggg acagcatcca ggaggcgagg ctgcatggtc
300
cagcggtggg tgcaggtggc aacaggtcgg cgggctgtgc aggttccaaa aggagctctc
360
gggttggcac tgggtgagac cagccccggg gccagcaggg gaatgagcgg tggagcaggg
420
ggttgctggg cactggggtg ggccccatct cctgtccttc cctcatggct gctggaaggg
480
ccgcctccct ggctcagcat catctcagat tccgggactc aaacaccgtc tcctcgtcgc
540
tgtccagcga ggccatctcc gtggggtcct cagtgttggc gaggaggccg tatcgcctcc
600
gctgaggctt cttcaaccta aacgcccgga tcaggaagta gagcgcggtc aggccgcaga
660
agcccaggat cacgtagaag gagcgcgtca gcgccgagcc cgacgccccc ggcggacgcg
720
tgtgcgtgct gttgtgtggc gcgcccggct ggctcccgtt cgtcacggcc ggcggcggcg
780
acaacgtgac ctggcggggg cagcggcgag cctcttcggc accgcacggc agcgccgcca
840
gcagcagcgc cagcaggagc agcagcagcg gcggctgcag cacgc
885
```

```
<210> 4528
<211> 206
<212> PRT
<213> Homo sapiens

<400> 4528
Xaa Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe
1               5                   10                  15
Cys Arg Asp Met Ala Ala Phe Ile Val Pro Ser Pro Ala Arg Arg Cys
            20                  25                  30
Ser Gln Lys Gly Ser Leu Gly His Leu Pro Thr Gln Pro Trp Leu Trp
            35                  40                  45
Ala Ala Met Ser Pro Arg Gly Gln Glu Arg Gly Thr Ser His Ser Gln
        50                  55                  60
Ala Arg Glu Pro Gln Arg Pro Gly Arg Trp Leu Leu Gly Ser Leu Gln
65                  70                  75                  80
Ser Ser Pro Gly Thr Leu Gly Gln Ala Gly Thr Ala Ser Arg Arg Arg
                85                  90                  95
Gly Cys Met Val Gln Arg Trp Val Gln Val Ala Thr Gly Arg Arg Ala
                100                 105                 110
Val Gln Val Pro Lys Gly Ala Leu Gly Leu Ala Leu Gly Glu Thr Ser
            115                 120                 125
Pro Gly Ala Ser Arg Gly Met Ser Gly Gly Ala Gly Gly Cys Trp Ala
        130                 135                 140
Leu Gly Trp Ala Pro Ser Pro Val Leu Pro Ser Trp Leu Leu Glu Gly
```

```
     145                    150                    155                    160
     Pro Pro Pro Trp Leu Ser Ile Ile Ser Asp Ser Gly Thr Gln Thr Pro
                         165                    170                    175
     Ser Pro Arg Arg Cys Pro Ala Arg Pro Ser Pro Trp Gly Pro Gln Cys
                 180                    185                    190
     Trp Arg Gly Gly Arg Ile Ala Ser Ala Glu Ala Ser Ser Thr
                 195                    200                    205
```

<210> 4529
<211> 546
<212> DNA
<213> Homo sapiens

<400> 4529

```
nngagagctg agaggtggaa aatggcgctg acgtgagcgc gaactcgcac tgcccagagg
60
gtggccgccg cctaagctgc agccgccgga gccgcagaaa caagaggccg agccgtgtcg
120
aagatggagg agaaaccctc agggcccatc ccggacatgc tggccactgc agagcccagc
180
tccagtgaga ccgacaagga ggtgttgtcc ccggctgtgc cagctgcagc cccctcctcc
240
tccatgtcgg aggagccagg ccctgagcag gcagccacac cgccagtggg gaacgtggag
300
gggctggagg gatgcagcag ggctcctccc cagccccaga cagctgccag tctggccccg
360
gacccagccc tggcctgacc agcatagtct ccgggaccag cgaggacctg cggcctccca
420
gacgacgccc acctccaggg aagcaaatcc cttgctccag ccctggctgc tgcctcagtt
480
ttcccagcgt ccgtgacctg cacagcatc tgcgaaccca ctgcccgccg agccctatgc
540
agtctc
546
```

<210> 4530
<211> 84
<212> PRT
<213> Homo sapiens

<400> 4530

```
Met Glu Glu Lys Pro Ser Gly Pro Ile Pro Asp Met Leu Ala Thr Ala
1               5                   10                  15
Glu Pro Ser Ser Ser Glu Thr Asp Lys Glu Val Leu Ser Pro Ala Val
            20                  25                  30
Pro Ala Ala Ala Pro Ser Ser Ser Met Ser Glu Glu Pro Gly Pro Glu
            35                  40                  45
Gln Ala Ala Thr Pro Pro Val Gly Asn Val Glu Gly Leu Glu Gly Cys
        50                  55                  60
Ser Arg Ala Pro Pro Gln Pro Gln Thr Ala Ala Ser Leu Ala Pro Asp
65                  70                  75                  80
Pro Ala Leu Ala
```

<210> 4531
<211> 1414
<212> DNA
<213> Homo sapiens

<400> 4531
nncacgtggc ctccgagcag ctcagggcgc ccttgaaagt tcttggatct gcgggttatg
60
gccggtccct tgcagggcgg tggggcccgg gccctggacc tactccgggg cctgccgcgt
120
gtgagcctgg ccaacttaaa gccgaatccc ggctccaaga aaccggagag aagaccaaga
180
ggtcggagaa gaggtagaaa atgtggcaga ggccataaag gagaaaggca aagaggaacc
240
cggccccgct tgggctttga gggaggccag actccatttt acatccgaat cccaaaatac
300
gggtttaacg aaggacatag tttcagacgc cagtataagc ctttgagtct caatagactg
360
cagtatctta ttgatttggg tcgtgttgat cctagtcaac ctattgactt aacccagctt
420
gtcaatggga gaggtgtgac catccagcca cttaaaaggg attatggtgt ccagctggtt
480
gaggagggtg ctgacacctt tacggcaaaa gttaatattg aagtacagtt ggcttcagaa
540
ctagctattg ctgccattga aaaaaatggt ggtgttgtta ctacagcctt ctatgatcca
600
agaagtctgg acattgtatg caaacctgtt ccattctttc ttcgtggaca acccattcca
660
aaaagaatgc ttccaccaga agaactggta ccatattaca ctgatgcaaa gaaccgtggg
720
tacctggcgg atcctgccaa atttcctgaa gcacgacttg aactcgccag gaagtatggt
780
tatatcttac ctgatatcac taaagatgaa ctcttcaaaa tgctctgtac taggaaggat
840
ccaaggcaga tttttctttgg tcttgctcca ggatgggtgg tgaatatggc cgataagaaa
900
atcctaaaac ctacagatga aaatctcctt aagtattata cctcatgaat tcccgtccaa
960
ggaagcagag ttgttaaaga gtactggaat aggggctgaa ggatctatat tcccttattg
1020
cattttcctt atgtataatt ttccagatgg tgatgttact tttcagtgta ctcatatgtc
1080
tcattttcat ctaaaattaa atggcaggaa acaaggactg catagagaaa ctgagtctgt
1140
gtgggttctg tctcaaagat acaaactccc tgatagtcta tggaaggaaa atgacaacta
1200
ttttagaata tttctagttt gttttttcag tgatcttttc atccaggcct tgttactgtt
1260
acagatcaga atgaaatgca caagtggaat gggattgacc tgtaggcctg ctctgccgag
1320
atgagagcag atggaatgag ttggtgaccc ctcttaatct gtagcctcag ggaaacacgg
1380
ctacccaatg ccaagatggt aaaccctcac gcgt
1414

3727

<210> 4532
<211> 296
<212> PRT
<213> Homo sapiens

<400> 4532
Met Ala Gly Pro Leu Gln Gly Gly Gly Ala Arg Ala Leu Asp Leu Leu
1   5   10   15
Arg Gly Leu Pro Arg Val Ser Leu Ala Asn Leu Lys Pro Asn Pro Gly
            20   25   30
Ser Lys Lys Pro Glu Arg Arg Pro Arg Gly Arg Arg Arg Gly Arg Lys
        35   40   45
Cys Gly Arg Gly His Lys Gly Glu Arg Gln Arg Gly Thr Arg Pro Arg
    50   55   60
Leu Gly Phe Glu Gly Gly Gln Thr Pro Phe Tyr Ile Arg Ile Pro Lys
65   70   75   80
Tyr Gly Phe Asn Glu Gly His Ser Phe Arg Arg Gln Tyr Lys Pro Leu
                85   90   95
Ser Leu Asn Arg Leu Gln Tyr Leu Ile Asp Leu Gly Arg Val Asp Pro
            100   105   110
Ser Gln Pro Ile Asp Leu Thr Gln Leu Val Asn Gly Arg Gly Val Thr
        115   120   125
Ile Gln Pro Leu Lys Arg Asp Tyr Gly Val Gln Leu Val Glu Glu Gly
    130   135   140
Ala Asp Thr Phe Thr Ala Lys Val Asn Ile Glu Val Gln Leu Ala Ser
145   150   155   160
Glu Leu Ala Ile Ala Ala Ile Glu Lys Asn Gly Gly Val Val Thr Thr
                165   170   175
Ala Phe Tyr Asp Pro Arg Ser Leu Asp Ile Val Cys Lys Pro Val Pro
                180   185   190
Phe Phe Leu Arg Gly Gln Pro Ile Pro Lys Arg Met Leu Pro Pro Glu
            195   200   205
Glu Leu Val Pro Tyr Tyr Thr Asp Ala Lys Asn Arg Gly Tyr Leu Ala
        210   215   220
Asp Pro Ala Lys Phe Pro Glu Ala Arg Leu Glu Leu Ala Arg Lys Tyr
225   230   235   240
Gly Tyr Ile Leu Pro Asp Ile Thr Lys Asp Glu Leu Phe Lys Met Leu
                245   250   255
Cys Thr Arg Lys Asp Pro Arg Gln Ile Phe Phe Gly Leu Ala Pro Gly
                260   265   .   270
Trp Val Val Asn Met Ala Asp Lys Lys Ile Leu Lys Pro Thr Asp Glu
            275   280   285
Asn Leu Leu Lys Tyr Tyr Thr Ser
    290   295

<210> 4533
<211> 968
<212> DNA
<213> Homo sapiens

<400> 4533
acgcgtgccc agcacatgtg tgcacacgca gatgcaggag agaacacaca ccaccgtctc
60

3728

```
tttgcacacg tgtgcccctg tccggacgcc ggggctgagg ccgatcgcgt cgggcagcgg
120
gcgcggcggc cccgcgcagc catggactgg ctcatgggga agtccaaagc caagcccaat
180
ggcaagaagc ccgctgcgga ggagaggaag gcctacctgg agcctgagca caccaaggcc
240
aggatcaccg acttccagtt caaggagctg gtggtgctgc cccgggagat cgacctcaac
300
gagtggctgg ccagcaacac aacaacattt ttccaccaca tcaacctgca gtatagcaca
360
atctcggagt tctgcacagg agagacgtgt cagacgatgg ccgtgtgcaa cacacagtac
420
tactggtatg acgagcgggg gaagaaggtc aagtgcacgg ccccacagta cgttgacttc
480
gtcatgagct ccgtgcagaa gctggtgacg gatgaggacg tgttccccac aaaatacggc
540
agagaattcc ccagctcctt tgagtccctg gtgaggaaga tctgcagaca cctgttccac
600
gtgctggcac acatctactg ggcccacttc aaggagacgc tggccctgga gctgcacgga
660
cacttgaaca cgctctacgt ccacttcatc ctctttgctc gggagttcaa cctgctggac
720
cccaaagaga ccgccatcat ggacgacctc accgaggtgc tatgcagcgg ggccggcggg
780
gtccacagtg ggggcagtgg ggatggggcc ggcagcgggg gcccgggagc acagaaccac
840
gtgaaggaga gatgagcccc ccgggccgga caggggcaca cgtgtgcaaa gagacggtgg
900
tgtgtgttct ctcctgcatc tgcgtgtgca cacatgtgct gggccctctc agacctcacc
960
acacgcgt
968
```

```
<210> 4534
<211> 284
<212> PRT
<213> Homo sapiens
```

```
<400> 4534
Thr Arg Ala Gln His Met Cys Ala His Ala Asp Ala Gly Glu Asn Thr
1               5                   10                  15
His His Arg Leu Phe Ala His Val Cys Pro Cys Pro Asp Ala Gly Ala
            20                  25                  30
Glu Ala Asp Arg Val Gly Gln Arg Ala Arg Arg Pro Arg Ala Ala Met
        35                  40                  45
Asp Trp Leu Met Gly Lys Ser Lys Ala Lys Pro Asn Gly Lys Lys Pro
    50                  55                  60
Ala Ala Glu Glu Arg Lys Ala Tyr Leu Glu Pro Glu His Thr Lys Ala
65                  70                  75                  80
Arg Ile Thr Asp Phe Gln Phe Lys Glu Leu Val Val Leu Pro Arg Glu
                85                  90                  95
Ile Asp Leu Asn Glu Trp Leu Ala Ser Asn Thr Thr Thr Phe Phe His
            100                 105                 110
His Ile Asn Leu Gln Tyr Ser Thr Ile Ser Glu Phe Cys Thr Gly Glu
```

```
             115                   120                   125
Thr Cys Gln Thr Met Ala Val Cys Asn Thr Gln Tyr Tyr Trp Tyr Asp
     130                   135                   140
Glu Arg Gly Lys Lys Val Lys Cys Thr Ala Pro Gln Tyr Val Asp Phe
145                   150                   155                   160
Val Met Ser Ser Val Gln Lys Leu Val Thr Asp Glu Asp Val Phe Pro
                 165                   170                   175
Thr Lys Tyr Gly Arg Glu Phe Pro Ser Ser Phe Glu Ser Leu Val Arg
                 180                   185                   190
Lys Ile Cys Arg His Leu Phe His Val Leu Ala His Ile Tyr Trp Ala
             195                   200                   205
His Phe Lys Glu Thr Leu Ala Leu Glu Leu His Gly His Leu Asn Thr
     210                   215                   220
Leu Tyr Val His Phe Ile Leu Phe Ala Arg Glu Phe Asn Leu Leu Asp
225                   230                   235                   240
Pro Lys Glu Thr Ala Ile Met Asp Asp Leu Thr Glu Val Leu Cys Ser
                 245                   250                   255
Gly Ala Gly Gly Val His Ser Gly Gly Ser Gly Asp Gly Ala Gly Ser
             260                   265                   270
Gly Gly Pro Gly Ala Gln Asn His Val Lys Glu Arg
         275                   280
```

```
<210> 4535
<211> 473
<212> DNA
<213> Homo sapiens

<400> 4535
cgactttttt tttttttttt ttttgagatg gagtctcgtt ctgtcaccca ggctggagtg
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cagtggcatg atcacagctc actgcaacct ctgcctccca ggttcaagca gttctctngc
120
ctcagcctcc cgagtagctg ggattacagg cgtccgccac cacgcccggc taattttgt
180
atttttagta gaaacggggt ttcaccatct cggccaggct ggtcttgaac tcctgacctc
240
atgatccatc cgccttggcc tcccaaagtg ctgggattac aggcatgagc taccgcgccc
300
ggccttggct gcagattaac gggaatacct cccttgggct tcctaggtga cactgtgata
360
ttcggtatga cctcccttgc tctattcctt ggaagaagta caggcactgg tcaagagtgc
420
ccgggaccca cattgcctgg ttttgaatcc cagcacctcc acatgttacg cgt
473
```

```
<210> 4536
<211> 75
<212> PRT
<213> Homo sapiens

<400> 4536
Arg Leu Phe Phe Phe Phe Phe Phe Glu Met Glu Ser Arg Ser Val Thr
1                   5                   10                  15
Gln Ala Gly Val Gln Trp His Asp His Ser Ser Leu Gln Pro Leu Pro
```

3730

```
              20                    25                    30
Pro Arg Phe Lys Gln Phe Ser Xaa Leu Ser Leu Pro Ser Ser Trp Asp
         35                    40                    45
Tyr Arg Arg Pro Pro Pro Arg Pro Ala Asn Phe Cys Ile Phe Ser Arg
      50                    55                    60
Asn Gly Val Ser Pro Ser Arg Pro Gly Trp Ser
65                    70                    75
```

<210> 4537
<211> 2811
<212> DNA
<213> Homo sapiens

<400> 4537

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naagcttggc acgagggaaa tgaagcctgt gatttggact ccacagtgtc tgctcttgcc
60
ctggcttttt acctagcaaa gacaactgag gctgaggaag tctttgtgcc agttttaaat
120
ataaaacgtt ctgaactacc tctgcgaggt gacattgtct tctttcttca gaaggttcat
180
attccagaga gtatcttgat ttttcgggat gagattgacc tccatgcatt ataccaggct
240
ggccaactca ccctcatcct tgtcgaccat catatcttat ccaaaagtga cacagcccta
300
gaggagngca gtagcagagg tgctagacca tcgacccatc gagccgaaac actgccctcc
360
ctgnnccatg tttcagttga gctggtgggg tcctgtgcta ccctggtgac cgagagaatc
420
ctgcaggggg caccagagat cttggacagg caaactgcag cccttctgca tggaaccatc
480
atcctggact gtgtcaacat ggaccttaaa attggaaagg caaccccaaa ggacagcaaa
540
tatgtggaga aactagaggc ccttttccca gacctaccca agagaaatga tatatttgat
600
tccctacaaa aggcaaagtt tgatgtatca ggactgacca ctgagcagat gctgagaaaa
660
gaccagaaga ctatctatag acaaggcgtc aaggtggcca ttagtgcaat atatatggat
720
ttggaggcct ttctgcagag gtctaacctc cttgcagatc tccatgcttt ctgccaggct
780
cacagctatg atgtcctggt tgccatgact atctttttca acactcacaa tgagccagtg
840
cggcagttgg ctattttctg tccccatgtg gcactccaaa caacgatctg tgaagtcctg
900
gaacgctccc actctccacc cctgaagctg acccctgcct caagtaccca ccctaacctc
960
catgcctatc ttcaaggcaa cacccaggtc tctcgaaaga aacttctgcc cctgctccag
1020
gaagccctgt cagcatattt tgactccatg aagatccctt caggacagcc tgagacagca
1080
gatgtgtcca gggagcaagt ggacaaggaa ttggacaggg caagtaactc cctgatttct
1140
ggactgagtc aagatgagga ggaccctccg ctgcccccga cgcccatgaa cagcttggtg
1200
```

3731

```
gatgagtgcc ctctagatca ggggctgcct aaactctctg ctgaggccgt cttcgagaag
1260
tgcagtcaga tctcactgtc acagtctacc acagcctccc tgtccaagaa gtgactgttg
1320
agaggcgagg aggtagtggg tgaggctacc tgactcactt caaatgcatg ttttgagatg
1380
tttggagatt cagcaattct gtcttcattg ctccaggatc tggtatactg ttctcataaa
1440
actgagagga gaaaaaagt gaaagaaagc agctgcttta agaatggttt tccacctttt
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1560
tatttgccag gggcacgatg tgacatatct gcagtcccag cacagtggga caaaaagaat
1620
ttagacccca aaagtgtcct cggcatggat cttgaacaga accagtatct gtcatggaac
1680
tgaacattca tcgatggtct ccatgtattc atttattcac ttgttcattc aagtatttat
1740
tgaatacctg cctcaagcta gagagaaaag agagtgcgct ttggaaattt attccagttt
1800
tcagcctaca gcagattatc agctcggtga cttttctttc tgccaccatt taggtgatgg
1860
tgtttgattc agagatggct gaatttctat tcttagctta ttgtgactgt ttcagatcta
1920
gtttgggaac agattagagg ccattgtctt ctgtcctgat caggtggcct ggctgtttct
1980
ttggatccct ctgtcccaga gccacccaga accctgactc ttgagaatca agaaaacacc
2040
cagaaaggcc ttaatgacct cataggcact cttccaaaaa gacaacagaa ctggaatgag
2100
aggcctgggt ctgtctcctg ccttagcagg cctatcaatt tcttgtcaat ctcttttttt
2160
ccttgctcac attaaaagga agcatggagt tctaatgctc ccataaacta tgtattttgg
2220
caagacactt cactactcca ggtctcactt tccccatctg taaaacaggg tttggactag
2280
gtgttccctg gtattctgtg atctgcctct tgctgccatt ctttctctcc tctgcttctc
2340
tgtattttc ttctgttatc cctgggggtg ctcaggttca cttgattgtc tgtatttctg
2400
tgtggttgta gcaaggactc agcctcatgt agcacgaata ggggtgtggt tcatggcgtg
2460
ttgacccagc agagcactcc ctcccactaa cttgttctgc atgtgtagag tctccccatt
2520
tttttaacg caacccttc cccttttcc taccccacag ctctgttcca tgtaagttgc
2580
caacagtttc actgaacagt ggggtatgtg atggttttgg catgacatct tcagtatgag
2640
ggggacagtt tgacttcact ttgagggtgt gatgtctgta gctatgtgga aggtaaaaat
2700
agtggtgtga tcatgaacca aaggaattta tgttttgtaa cttgggtact ttattttgca
2760
ttttgttata ctattaaata attttttcct gttaaaaaaa aaaaaaaaaa a
2811
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3732

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<210> 4538
<211> 437
<212> PRT
<213> Homo sapiens

<400> 4538
Xaa Ala Trp His Glu Gly Asn Glu Ala Cys Asp Leu Asp Ser Thr Val
1               5                   10                  15
Ser Ala Leu Ala Leu Ala Phe Tyr Leu Ala Lys Thr Thr Glu Ala Glu
            20                  25                  30
Glu Val Phe Val Pro Val Leu Asn Ile Lys Arg Ser Glu Leu Pro Leu
        35                  40                  45
Arg Gly Asp Ile Val Phe Phe Leu Gln Lys Val His Ile Pro Glu Ser
    50                  55                  60
Ile Leu Ile Phe Arg Asp Glu Ile Asp Leu His Ala Leu Tyr Gln Ala
65                  70                  75                  80
Gly Gln Leu Thr Leu Ile Leu Val Asp His His Ile Leu Ser Lys Ser
            85                  90                  95
Asp Thr Ala Leu Glu Glu Xaa Ser Ser Arg Gly Ala Arg Pro Ser Thr
            100                 105                 110
His Arg Ala Glu Thr Leu Pro Ser Leu Xaa His Val Ser Val Glu Leu
            115                 120                 125
Val Gly Ser Cys Ala Thr Leu Val Thr Glu Arg Ile Leu Gln Gly Ala
            130                 135                 140
Pro Glu Ile Leu Asp Arg Gln Thr Ala Ala Leu Leu His Gly Thr Ile
145                 150                 155                 160
Ile Leu Asp Cys Val Asn Met Asp Leu Lys Ile Gly Lys Ala Thr Pro
            165                 170                 175
Lys Asp Ser Lys Tyr Val Glu Lys Leu Glu Ala Leu Phe Pro Asp Leu
            180                 185                 190
Pro Lys Arg Asn Asp Ile Phe Asp Ser Leu Gln Lys Ala Lys Phe Asp
    195                 200                 205
Val Ser Gly Leu Thr Thr Glu Gln Met Leu Arg Lys Asp Gln Lys Thr
    210                 215                 220
Ile Tyr Arg Gln Gly Val Lys Val Ala Ile Ser Ala Ile Tyr Met Asp
225                 230                 235                 240
Leu Glu Ala Phe Leu Gln Arg Ser Asn Leu Leu Ala Asp Leu His Ala
            245                 250                 255
Phe Cys Gln Ala His Ser Tyr Asp Val Leu Val Ala Met Thr Ile Phe
            260                 265                 270
Phe Asn Thr His Asn Glu Pro Val Arg Gln Leu Ala Ile Phe Cys Pro
            275                 280                 285
His Val Ala Leu Gln Thr Thr Ile Cys Glu Val Leu Glu Arg Ser His
            290                 295                 300
Ser Pro Pro Leu Lys Leu Thr Pro Ala Ser Ser Thr His Pro Asn Leu
305                 310                 315                 320
His Ala Tyr Leu Gln Gly Asn Thr Gln Val Ser Arg Lys Lys Leu Leu
            325                 330                 335
Pro Leu Leu Gln Glu Ala Leu Ser Ala Tyr Phe Asp Ser Met Lys Ile
            340                 345                 350
Pro Ser Gly Gln Pro Glu Thr Ala Asp Val Ser Arg Glu Gln Val Asp
            355                 360                 365
Lys Glu Leu Asp Arg Ala Ser Asn Ser Leu Ile Ser Gly Leu Ser Gln
```

```
            370                375                380
Asp Glu Glu Asp Pro Pro Leu Pro Pro Thr Pro Met Asn Ser Leu Val
385                390                395                400
Asp Glu Cys Pro Leu Asp Gln Gly Leu Pro Lys Leu Ser Ala Glu Ala
                405                410                415
Val Phe Glu Lys Cys Ser Gln Ile Ser Leu Ser Gln Ser Thr Thr Ala
                420                425                430
Ser Leu Ser Lys Lys
            435
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<210> 4539
<211> 331
<212> DNA
<213> Homo sapiens

<400> 4539
gtgcacggag gaaagtctca tgagcagcct gaatgggggc tctgttcctt ctgagctgga
60
tgggctggac tccgagaaag accagaagcc tggggggaaaa ccaaagggta atcaatgaac
120
tcacctggaa actccagcaa gagcagaggc aggtggagga gctgaggatg cagcttcaga
180
agcagaaaag gaataactgt tcagagaaga agccgctgcc tttcctggct gcctccatca
240
agcaagaaga ggctgtctcc agctgtcctt ttgcatccca agtacctgtg aaaagacaaa
300
gcagcagctc aaagtgtcac ccaccggctt g
331

<210> 4540
<211> 99
<212> PRT
<213> Homo sapiens

<400> 4540
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Met Gly Ala Leu Phe Leu Leu Ser Trp Met Gly Trp Thr Pro Arg Lys
 1               5                10                15
Thr Arg Ser Leu Gly Glu Asn Gln Arg Val Ile Asn Glu Leu Thr Trp
                20                25                30
Lys Leu Gln Gln Glu Gln Arg Gln Val Glu Glu Leu Arg Met Gln Leu
            35                40                45
Gln Lys Gln Lys Arg Asn Asn Cys Ser Glu Lys Lys Pro Leu Pro Phe
        50                55                60
Leu Ala Ala Ser Ile Lys Gln Glu Glu Ala Val Ser Ser Cys Pro Phe
65                70                75                80
Ala Ser Gln Val Pro Val Lys Arg Gln Ser Ser Ser Ser Lys Cys His
                85                90                95
Pro Pro Ala
```


<210> 4541
<211> 452
<212> DNA
<213> Homo sapiens

<400> 4541
actagtcacc tcttctatca gatgatcatc tggatcatat tcttttagat taataatggc
60
cacaggcaga tccagggatg taactgcttc agcaagaact gttgcgaatc ccttcgctgt
120
tccagtctga gaaccataaa aaatcttcac tccagacaca aagatgtctt tctcttgaag
180
ggagacataa ccatttgtca tcaaatcctg agctgctttt ggaacagatt tttcctgtaa
240
gttcttgccc tgcgtcttga tgacaatctg gacacaaatc caaaggctaa tgctaacagc
300
aaagcccaaa taaatgtaaa acctgtttat ccacaatgat attaaaggtg agaagaggtc
360
ccatgtatcc gcagagggat ccatcctcct cagagccgac aggagactag gatctcggac
420
ctggagagcc cgatgattcg cactggtact gc
452

<210> 4542
<211> 128
<212> PRT
<213> Homo sapiens

<400> 4542
Met Asp Pro Ser Ala Asp Thr Trp Asp Leu Phe Ser Pro Leu Ile Ser
1   5   10   15
Leu Trp Ile Asn Arg Phe Tyr Ile Tyr Leu Gly Phe Ala Val Ser Ile
                20   25   30
Ser Leu Trp Ile Cys Val Gln Ile Val Ile Lys Thr Gln Gly Lys Asn
            35   40   45
Leu Gln Glu Lys Ser Val Pro Lys Ala Ala Gln Asp Leu Met Thr Asn
        50   55   60
Gly Tyr Val Ser Leu Gln Glu Lys Asp Ile Phe Val Ser Gly Val Lys
65   70   75   80
Ile Phe Tyr Gly Ser Gln Thr Gly Thr Ala Lys Gly Phe Ala Thr Val
                85   90   95
Leu Ala Glu Ala Val Thr Ser Leu Asp Leu Pro Val Ala Ile Ile Asn
            100   105   110
Leu Lys Glu Tyr Asp Pro Asp Asp His Leu Ile Glu Glu Val Thr Ser
        115   120   125

<210> 4543
<211> 815
<212> DNA
<213> Homo sapiens

<400> 4543
cggccgccga ggactggcct gactcggaca tttcatcctg tggacactaa ggccaaacac
60
agggaggagg gagagcgagt cactgcaggt ccctggcctg cggctccgcc gtggctgcct
120
gaggccccgc gcaccaatgc tttgcacttt gcctcgcccg acaccctgcg ggccagagct
180

```
cctctgccgc ccaccgggct aacccttccg ggcctcacca ctcccgagtg gctctgctta
240
tccggccact gactccggct cctcggaagc agggccaccc tcctgaaatg gcttggaacg
300
gggctttcca ctggtgccct ccccagacga ttgcttgtaa tgggccagtg cctcgccagg
360
gacacagcgg cagccccctg tagcttgtgg ctgttcagaa acaagtccag cccaggtagg
420
gcagagggct ctgactgggg acccaagaag ggctggctgt gccgccaccg ctgccccgtc
480
accatcactg tgctgaagag ctcgaggctg ggcccacccg cgccggcccc acgttcctcc
540
ccgggctcag gtcagggcca gggagtgacc agaaggtgct gaccctgtgg cctgactggc
600
ccagagctca cccctgaaca tgagcaagcg caaagaaacc cccatccctg ctcccaaaaa
660
agggcgcccc caaggccatt ttgaaggtgg ggggaagccc ggattccgag aaaccgcaac
720
cagccgtcta cctcaggaag ctcgctaggg aggagcgcat tctatgtgac taatgcggac
780
tggcctgcac cgcctacgga gagaagacaa cgcgt
815
```

```
<210> 4544
<211> 150
<212> PRT
<213> Homo sapiens
```

```
<400> 4544
Met Val Thr Gly Gln Arg Trp Arg His Ser Gln Pro Phe Leu Gly Pro
1               5                   10                  15
Gln Ser Glu Pro Ser Ala Leu Pro Gly Leu Asp Leu Phe Leu Asn Ser
            20                  25                  30
His Lys Leu Gln Gly Ala Ala Ala Val Ser Leu Ala Arg His Trp Pro
        35                  40                  45
Ile Thr Ser Asn Arg Leu Gly Arg Ala Pro Val Glu Ser Pro Val Pro
    50                  55                  60
Ser His Phe Arg Arg Val Ala Leu Leu Pro Arg Ser Arg Ser Gln Trp
65                  70                  75                  80
Pro Asp Lys Gln Ser His Ser Gly Val Val Arg Pro Gly Arg Val Ser
                85                  90                  95
Pro Val Gly Gly Arg Gly Ala Leu Ala Arg Arg Val Ser Gly Glu Ala
            100                 105                 110
Lys Cys Lys Ala Leu Val Arg Gly Ala Ser Gly Ser His Gly Gly Ala
        115                 120                 125
Ala Gly Gln Gly Pro Ala Val Thr Arg Ser Pro Ser Ser Leu Cys Leu
    130                 135                 140
Ala Leu Val Ser Thr Gly
145                 150
```

```
<210> 4545
<211> 3568
<212> DNA
<213> Homo sapiens
```

```
<400> 4545
nntgtacaag cttttagtagg tggttatatt ggtggacttg tccccaaatt aaagtatgat
60
tcaaagagtc agtcagaaga acaggaagag cctgctaaaa ctgatcaggc tgtcagcaaa
120
gacagaaatg cagaggagaa aaagcgttta tctcttcagc gagaaaagat tatcgcaagg
180
gtgagtattg ataacaggac ccgggcatta gttcaggcat taagaagaac aactgaccca
240
aagctctgca ttactagggt tgaagaactg acttttcatc ttctagaatt tcctgaagga
300
aaaggagtgg ctgtcaagga aagaattatt ccatatttat tacgactgag acaaattaag
360
gatgaaactc ttcaggctgc agttagagaa attttggccc taattggcta tgtggatcca
420
gtgaaaggga gaggaatccg aattctctca attgatggtg gaggaacaag gggcgtggtt
480
gctctccaga ccctacgaaa attagttgaa cttactcaga agccagttca tcagctcttt
540
gattacattt gtggtgtaag cacaggtgcc atattagctt tcatgttggg gttgtttcat
600
atgcccttgg atgaatgtga ggaactttat cgaaaattag gatcagatgt attttcacaa
660
aatgtcattg ttggaacagt aaaaatgagt tggagccatg cattttatga cagtcaaaca
720
tgggaaaaca ttcttaagga taggatggga tctgcactga tgattgaaac agcaagaaac
780
cccacatgtc ctaaggtagc tgctgtaagt accatagtaa atagagggat aacacccaaa
840
gcttttgtgt tcagaaacta tggtcatttt cctggaatca actctcatta tttgggaggc
900
tgtcagtata aaatgtggca ggccattaga gcctcatctg ctgctccagg ctactttgca
960
gaatatgcat tgggaaatga tcttcatcaa gatggaggtt tgcttctgaa taacccttcg
1020
gcattagcta tgcatgagtg taaatgtctt tggccagatg tgccgttaga gtgcatagta
1080
tccctgggca ctggacgtta tgagagtgat gtgagaaaca cggtaacata cacaagcttg
1140
aaaactaaac tttctaatgt tatcaacagt gctacagata cagaagaagt ccatataatg
1200
cttgatggcc tgttacctcc tgacacctat tttagattca atcctgtaat gtgtgaaaac
1260
ataccctctag atgaaagtcg aaatgaaaag ctggatcagc tgcagttgga agggttgaaa
1320
tacatagaaa gaaatgaaca aaaaatgaaa aaagttgcaa aaatattaag tcaagaaaaa
1380
acaactctgc agaaaattaa tgattggata aaattaaaaa ctgatatgta tgaaggactt
1440
ccattctttt caaaattgtg atgagtatat gcttatgttc tcataaatga aggtctgttt
1500
agaagatcaa ccacattcaa taaggaattg tggggttcga catgagttaa ctttgaaata
1560
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cgtatgaatt ctggagaatc ctgaaaaaga cggtgcttca accagcttgc atagcacaga
1620
gaatattctt ggttacagaa ttcatatggg aactaggctt ttaagatgtt aataattagc
1680
taagctttag taacccttac tgtgctagta gattttagta gatattggtg ttatattgtt
1740
tgatgtttga aaatatatta atatatgtgc cgaacaagaa accgaaagct atattgtact
1800
gtgtattttt actttagtcc tcataatcat gttgaattta tgtgatcatt gattttattt
1860
catatggaaa agctaatttc ttcttaaatt tacattacct aatattctca ctagctatgt
1920
tctccaatcc acactgcctt ttattgtaat atcatctaaa tagatgcaga aaaatggaat
1980
tttctctatt aaagtatttt acatttgaca taaaaaagaa ccagatacag ttttctattc
2040
agatatgttt attttaacat tgtttggtta aaaaaggtga agttccagtc aaccactttt
2100
tacccctgaa atttcaagat aatgctatat taacttttcc agatctaacc ctagcttatc
2160
cttccctgtt ataaaatggt ttgaacttac tgaggagata ttcccatcat taacaaaaat
2220
aaactattta aataaaaaag gatagaggtt caacatattt agtcattatg gaagtgcaaa
2280
tcaaagtcat atgccacttc acaccaacca catttgtcaa aataaaaaaa aaaaaacagg
2340
aaataggaat tgttgataag aatgtggagg tattggaacc cctgtacatt gctggtgaga
2400
atgtaaaatg gtggtgctac cacagaaaac acattggctc tttgttaaaa tgtaaacata
2460
aaatttcctt acaagtcagt atgagtactt cttaattgta tacctgagat aactgaaaac
2520
atatgttttt taaaataact tttgtccaga tgttcatagc atcatttttt actgtagttg
2580
aaaaatggaa acaaactaaa tgtccatcac ctactaaata aaatgtggca tagccataca
2640
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2700
aacattatac taagtgaaag aagccagata caaaaggcca atattgtatg attctatttt
2760
tgtgaagtgc ccagaatagg caattttata tggaaagaaa gcagagtagt ggtttccagg
2820
ggctgagtga gggaaaatgg ggaataacca cttaatgtgt acagagtttc tttttaggat
2880
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2940
cactgaattg taccctttaa gatggttaaa atggttaatt ttatgttatg taaacattat
3000
ttctctaata aagtagattt tcagcaacaa agggcccatt agaatggaag catactctga
3060
agggttatta gttatcaact cctaacatgc aaaatatttt taggtagcat ttttatatag
3120
aagaaattat attcaggcat attaagcatt gagtgtcatt attattgatg tataatggat
3180

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tcccatccaa cattatggtg tgattttaaa agaagagcca ggaaatcaaa agtattttct
3240
ctggggctta atctttgatc agatcattga aaaacttatg gcttccagat ttgtggggga
3300
cagatacttt tactcattat ccaatgctct aaggccaccc agagagactg gattatctac
3360
attgactatt cacatttcct tagatatatt tatttgaatg atggcttcta caaagtagag
3420
aagtctgtca ttatgagaga taaagccagc tgggcttctg ggttgggtgg ggtcttggag
3480
aacttttctg tctagctaaa ggattgtaag tgcacccatc agcactctgt aaaaacacac
3540
caatcagcac tctgtgtcta gctaaagg
3568
```

<210> 4546
<211> 380
<212> PRT
<213> Homo sapiens

<400> 4546

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Glu Arg Ile Ile Pro Tyr Leu Leu Arg Leu Arg Gln Ile Lys Asp Glu
 1               5                  10                  15
Thr Leu Gln Ala Ala Val Arg Glu Ile Leu Ala Leu Ile Gly Tyr Val
             20                  25                  30
Asp Pro Val Lys Gly Arg Gly Ile Arg Ile Leu Ser Ile Asp Gly Gly
         35                  40                  45
Gly Thr Arg Gly Val Val Ala Leu Gln Thr Leu Arg Lys Leu Val Glu
     50                  55                  60
Leu Thr Gln Lys Pro Val His Gln Leu Phe Asp Tyr Ile Cys Gly Val
65                  70                  75                  80
Ser Thr Gly Ala Ile Leu Ala Phe Met Leu Gly Leu Phe His Met Pro
                 85                  90                  95
Leu Asp Glu Cys Glu Glu Leu Tyr Arg Lys Leu Gly Ser Asp Val Phe
            100                 105                 110
Ser Gln Asn Val Ile Val Gly Thr Val Lys Met Ser Trp Ser His Ala
            115                 120                 125
Phe Tyr Asp Ser Gln Thr Trp Glu Asn Ile Leu Lys Asp Arg Met Gly
        130                 135                 140
Ser Ala Leu Met Ile Glu Thr Ala Arg Asn Pro Thr Cys Pro Lys Val
145                 150                 155                 160
Ala Ala Val Ser Thr Ile Val Asn Arg Gly Ile Thr Pro Lys Ala Phe
                165                 170                 175
Val Phe Arg Asn Tyr Gly His Phe Pro Gly Ile Asn Ser His Tyr Leu
            180                 185                 190
Gly Gly Cys Gln Tyr Lys Met Trp Gln Ala Ile Arg Ala Ser Ser Ala
            195                 200                 205
Ala Pro Gly Tyr Phe Ala Glu Tyr Ala Leu Gly Asn Asp Leu His Gln
        210                 215                 220
Asp Gly Gly Leu Leu Leu Asn Asn Pro Ser Ala Leu Ala Met His Glu
225                 230                 235                 240
Cys Lys Cys Leu Trp Pro Asp Val Pro Leu Glu Cys Ile Val Ser Leu
                245                 250                 255
Gly Thr Gly Arg Tyr Glu Ser Asp Val Arg Asn Thr Val Thr Tyr Thr
```

```
                260                    265                    270
Ser Leu Lys Thr Lys Leu Ser Asn Val Ile Asn Ser Ala Thr Asp Thr
            275                    280                    285
Glu Glu Val His Ile Met Leu Asp Gly Leu Leu Pro Pro Asp Thr Tyr
        290                    295                    300
Phe Arg Phe Asn Pro Val Met Cys Glu Asn Ile Pro Leu Asp Glu Ser
    305                    310                    315                    320
Arg Asn Glu Lys Leu Asp Gln Leu Gln Leu Glu Gly Leu Lys Tyr Ile
                325                    330                    335
Glu Arg Asn Glu Gln Lys Met Lys Lys Val Ala Lys Ile Leu Ser Gln
            340                    345                    350
Glu Lys Thr Thr Leu Gln Lys Ile Asn Asp Trp Ile Lys Leu Lys Thr
        355                    360                    365
Asp Met Tyr Glu Gly Leu Pro Phe Phe Ser Lys Leu
    370                    375                    380
```

<210> 4547
<211> 2211
<212> DNA
<213> Homo sapiens

<400> 4547
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ngtttcattc tcttgttctt ctacagtgga gacagattcc tctgaactta tgtctggttc
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tggctttttct tcctcccctt cagcaagctt gcttttggga ggagtttccc gggtagaatt
120
cacagttcga cgaatcggca tggtgctatc ttctaccttc tctgagctcg gcggctggga
180
ctggaggaca gcggtggcgg aggcgactag cggcggcggg agcggcgccg agaggccgtg
240
cgggacgcgg gcgccaggac cggccgaacg cagaggttga ttcttcacca cactgaaacc
300
attaggaaaa atccttgtgg ttaacagcag aggcttcaga gtgtaacctg tactcgggcc
360
tagaaattat ttaaaatggc gactgatacg tctcaaggtg aactcgtcca tcctaaggca
420
ctcccactta tagtaggagc tcagctgatc cacgcggaca agttaggtga gaaggtagaa
480
gatagcacca tgccgattcg tcgaactgtg aattctaccc gggaaactcc tcccaaaagc
540
aagcttgctg aaggggagga agaaaagcca gaaccagaca taagttcaga ggaatctgtc
600
tccactgtag aagaacaaga gaatgaaact ccacctgcta cttcgagtga ggcagagcag
660
ccaaaggggg aacctgagaa tgaagagaag gaagaaaata gtcttctga ggaaaccaaa
720
aaggatgaga aagatcagtc taaagaaaag gagaagaaag tgaaaaaaac aattccttcc
780
tgggctaccc tttctgccag ccagctagcc agggcccaga aacaaacacc gatggcttct
840
tccccacgtc ccaagatgga tgcaatctta actgaggcca ttaaggcatg cttccagaag
900
agtggtgcat cagtggttgc tattcgaaaa tacatcatcc ataagtatcc ttctctggag
960
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ctggagagaa ggggttatct ccttaaacaa gcactgaaaa gagaattaaa tagaggagtc
1020
atcaaacagg tattacacaa tgttaaagga aaaggtgctt ctggaagttt tgttgtggtt
1080
cagaaatcaa gaaaaacacc tcagaaatcc agaaacagaa agaataggag ctctgcagtg
1140
gatccagaac cacaagtaaa attggaggat gtcctcccac tggcctttac tcgcctttgt
1200
gaacctaaag aagcttccta cagtctcatc aggaaatatg tgtctcagta ttatcctaag
1260
cttagagtgg acatcaggcc tcagctgttg aagaacgctc tgcagagagc agtagagagg
1320
ggccagttag aacagataac tggcaaaggt gcttcgggga cattccagct gaagaaatca
1380
ggggagaaac ccctgcttgg tggaagcctg atggaatatg caatcttgtc tgccattgct
1440
gccatgaatg agccgaagac ctgctctacc actgctctga agaagtatgt cctagagaat
1500
cacccaggaa ccaattctaa ctatcaaatg catttgctga aaaaaaccct gcagaaatgc
1560
gaaaagaatg ggtggatgga acagatctct gggaaagggt tcagtggcac cttccagctc
1620
tgttttccct attatcccag cccaggagtt ctgtttccga agaaagagcc agatgattct
1680
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1740
ccacctaaga gaaggttgca gaagaaaacc ccagccaagt ccccagggaa ggccgcatct
1800
gtgaagcaga gagggtccaa acctgcacct aaagtctcag ctgcccagcg ggggaaagct
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aggcccttgc ctaagaaagc acctcctaag gccaaaacgc ctgccaagaa gaccagaccc
1920
tcatccacag tcatcaagaa acctagtggt ggctcctcaa agaagcctgc aaccagtgca
1980
agaaaggaag taaaattgcc gggcaagggc aaatccacca tgaagaagtc tttcagagtg
2040
aaaaagtaaa ttttatagga aaaaagggta tcatgatgaa attcaaaatc ttattttcta
2100
aggtcagtgt gcatttgttt agttttgatg cttttcaaat tacattattt tcctccccta
2160
tgaacattgt ggggagggac tctaaataaa ccagtttagg catttgctag c
2211

<210> 4548
<211> 515
<212> PRT
<213> Homo sapiens

<400> 4548
Arg Thr Val Asn Ser Thr Arg Glu Thr Pro Pro Lys Ser Lys Leu Ala
 1   5   10   15
Glu Gly Glu Glu Glu Lys Pro Glu Pro Asp Ile Ser Ser Glu Glu Ser
            20   25   30
Val Ser Thr Val Glu Glu Gln Glu Asn Glu Thr Pro Pro Ala Thr Ser

```
          35                    40                    45
Ser Glu Ala Glu Gln Pro Lys Gly Glu Pro Glu Asn Glu Glu Lys Glu
     50                    55                    60
Glu Asn Lys Ser Ser Glu Glu Thr Lys Lys Asp Glu Lys Asp Gln Ser
65                    70                    75                    80
Lys Glu Lys Glu Lys Lys Val Lys Lys Thr Ile Pro Ser Trp Ala Thr
                    85                    90                    95
Leu Ser Ala Ser Gln Leu Ala Arg Ala Gln Lys Gln Thr Pro Met Ala
                   100                   105                   110
Ser Ser Pro Arg Pro Lys Met Asp Ala Ile Leu Thr Glu Ala Ile Lys
                   115                   120                   125
Ala Cys Phe Gln Lys Ser Gly Ala Ser Val Val Ala Ile Arg Lys Tyr
         130                   135                   140
Ile Ile His Lys Tyr Pro Ser Leu Glu Leu Glu Arg Arg Gly Tyr Leu
145                   150                   155                   160
Leu Lys Gln Ala Leu Lys Arg Glu Leu Asn Arg Gly Val Ile Lys Gln
                   165                   170                   175
Val Leu His Asn Val Lys Gly Lys Gly Ala Ser Gly Ser Phe Val Val
                   180                   185                   190
Val Gln Lys Ser Arg Lys Thr Pro Gln Lys Ser Arg Asn Arg Lys Asn
                   195                   200                   205
Arg Ser Ser Ala Val Asp Pro Glu Pro Gln Val Lys Leu Glu Asp Val
         210                   215                   220
Leu Pro Leu Ala Phe Thr Arg Leu Cys Glu Pro Lys Glu Ala Ser Tyr
225                   230                   235                   240
Ser Leu Ile Arg Lys Tyr Val Ser Gln Tyr Tyr Pro Lys Leu Arg Val
                   245                   250                   255
Asp Ile Arg Pro Gln Leu Leu Lys Asn Ala Leu Gln Arg Ala Val Glu
                   260                   265                   270
Arg Gly Gln Leu Glu Gln Ile Thr Gly Lys Gly Ala Ser Gly Thr Phe
                   275                   280                   285
Gln Leu Lys Lys Ser Gly Glu Lys Pro Leu Leu Gly Gly Ser Leu Met
         290                   295                   300
Glu Tyr Ala Ile Leu Ser Ala Ile Ala Ala Met Asn Glu Pro Lys Thr
305                   310                   315                   320
Cys Ser Thr Thr Ala Leu Lys Lys Tyr Val Leu Glu Asn His Pro Gly
                   325                   330                   335
Thr Asn Ser Asn Tyr Gln Met His Leu Leu Lys Lys Thr Leu Gln Lys
         340                   345                   350
Cys Glu Lys Asn Gly Trp Met Glu Gln Ile Ser Gly Lys Gly Phe Ser
         355                   360                   365
Gly Thr Phe Gln Leu Cys Phe Pro Tyr Tyr Pro Ser Pro Gly Val Leu
370                   375                   380
Phe Pro Lys Lys Glu Pro Asp Asp Ser Arg Asp Glu Asp Glu Asp Glu
385                   390                   395                   400
Asp Glu Ser Ser Glu Glu Asp Ser Glu Asp Glu Glu Pro Pro Pro Lys
                   405                   410                   415
Arg Arg Leu Gln Lys Lys Thr Pro Ala Lys Ser Pro Gly Lys Ala Ala
         420                   425                   430
Ser Val Lys Gln Arg Gly Ser Lys Pro Ala Pro Lys Val Ser Ala Ala
         435                   440                   445
Gln Arg Gly Lys Ala Arg Pro Leu Pro Lys Lys Ala Pro Pro Lys Ala
         450                   455                   460
Lys Thr Pro Ala Lys Lys Thr Arg Pro Ser Ser Thr Val Ile Lys Lys
```

3742

```
465                         470                     475                     480
Pro Ser Gly Gly Ser Ser Lys Lys Pro Ala Thr Ser Ala Arg Lys Glu
                         485                     490                     495
Val Lys Leu Pro Gly Lys Gly Lys Ser Thr Met Lys Lys Ser Phe Arg
             500                             505                 510
Val Lys Lys
         515
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```
<210> 4549
<211> 2927
<212> DNA
<213> Homo sapiens
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<400> 4549
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ctcttgctgg ccagcacgga gcccagcagc ctgtgctatg tggagacggt ggacattgac
120
ggggagacca acttgaagtt cagacaggcc ctgatggtca cccacaaaga actggccact
180
ataaagaaga tggcgtcctt tcaaggcaca gtgacgtgtg aggcgcctaa cagtcggatg
240
caccacttcg tggggtgcct ggaatggaat gacaagaaat actccctgga cattggcaac
300
ctcctcctcc gaggctgcag gattcgcaac acagacacct gctatggact ggtcatttat
360
gctgatggat acatgtttgt aggttttgac acaaaaatta tgaagaactg tggcaagatc
420
catttgaaga gaaccaagct ggacctcctg atgaacaagc tggtggttgt gatcttcatc
480
tccgtggtgc ttgtctgcct ggtgttggcc ttcggcttcg gtttctcagt caaagaattc
540
aaagaccacc actactacct ctcggggggtg catgggagca gcgtggccgc agagtccttc
600
ttcgtcttct ggagcttcct catcctgctc agcgtcacca tcccgatgtc catgttcatc
660
ctgtccgagt tcatctacct ggggaacagc gtcttcatcg actgggacgt gcagatgtac
720
tacaagccgc aggacgtgcc tgccaaggcc cgcagcacca gcctcaacga ccacctgggc
780
caggtggaat acatcttctc ggacaagacg ggcacgctca cgcagaacat cttgaccttc
840
aacaagtgct gcatcagcgg ccgcgtctat ggagaacccc tacctctgga acaagttcgc
900
cgacgggaag ctgctcttcc acaatgcggc cctgctgcac ctcgtgcgga ccaacgggga
960
cgaggccgtg cgggagttct ggcgcctgct ggccatctgc cacacggtga tgaccagctg
1020
ttgtaccagg cggcctcccc cgacgagggg cgcctggtca ccgcagcccg gaacttcggc
1080
tacgtgttcc tgtcccgcac ccaggacacc gtcacgatca tggagctggg ggaggaacgg
1140
gtctaccagg tcctggccat aatggacttc aacagcacgc gcaaacggat gtcggtgctg
1200
```

3743

```
gttcgaaagc cagagggcgc catctgcctg tacaccaagg gcgccgacac ggtcatcttc
1260
gaacgcttgc acaggagggg ggcaatggaa tttgccacag aggaggcctt ggctgccttt
1320
gcccaggaga ccctgcggac actgtgcctg gcctacaggg aggtggctga ggacatttac
1380
gaggactggc agcagcgcca ccaggaggcc agcctcctgc tgcagaaccg ggcacaggcc
1440
ctgcaacagg tgtacaacga gatggagcag gacctcaggc tgctgggagc cacagccatc
1500
gaggacagac tccaggacgg tgtccctgaa accatcaaat gtctcaagaa gagcaacatc
1560
aaaatatggg tgctcaccgg ggacaagcag gaaacggctg tgaacatcgg cttcgcctgc
1620
gagctgctgt cagagaatat gctcattctg gaggagaagg agattagccg catcctggag
1680
acctactggg aaaacagtaa caaccttcta accagggagt ccctgtcgca ggtcaagctg
1740
gccttggtca ttaacggaga cttcctggac aaactgctgg tgtccctgcg gaaggagccg
1800
cgcgccctgg cgcagaacgt gaacatggac gaggcgtggc aggagctcgg ccagtccagg
1860
agggatttcc tctacgccag gcgcctgtcc ctgctgtgcc ggaggttcgg gctcccgctg
1920
gctgcaccgc cagcccagga ctccagagcc cgccgtagct ccgaggtgct gcaggagcgc
1980
gccttcgtgg acctggcgtc caagtgccag gcggtcatct gctgccgcgt gacgcccaag
2040
cagaaggccc tgatcgtggc cctggtcaag aagtaccacc aggtggtgac cctggccatc
2100
ggggacggtg ccaacgacat caacatgatc aagaccgcgg acgtgggcgt ggggctggcg
2160
ggccaggagg gcatgcaggc agttcagaac agcgacttcg tgctcggcca gttctgcttc
2220
ctgcagcgcc tcctgctggt gcacggccgc tggtcctacg tgcggatctg caagttcctg
2280
cgctacttct tctacaagag catggccagc atgatggtgc aggtctggtt tgcctgctac
2340
aacggcttca ccggccagga cgtgagcgca gagcagagcc tggagaagcc ggagctgtac
2400
gtggtggggc agaaggacga gctcttcaac tactgggtct cgtccaagc catcgcccat
2460
ggtgtgacca cctctctggt caacttcttc atgacactgt ggatcagccg cgacacggcg
2520
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2580
ctgtccatca ccatggaggt cattcttatc atcaagtact ggaccgccct gtgcgtggcg
2640
accatcctcc tcagccttgg tttctacgcc atcatgacta ccaccaccca gagcttctgg
2700
ctcttcagaa tgccgacctc agcgtgatgt cctctccctc catcctgctg gtggtcctgc
2760
tgagtgtgtc cataaacacc ttccctgtcc tggccctccg agtcatcttc ccagccctca
2820
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aggagctacg tgccaaggtg aggtgggcct gggcctgggg tcctcatctg gtacattcca
2880
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2927

<210> 4550
<211> 908
<212> PRT
<213> Homo sapiens

<400> 4550
Asp Leu Cys Val Gly Asp Val Val Cys Leu Arg Lys Asp Asn Ile Val
1   5   10   15
Pro Ala Asp Met Leu Leu Leu Ala Ser Thr Glu Pro Ser Ser Leu Cys
            20   25   30
Tyr Val Glu Thr Val Asp Ile Asp Gly Glu Thr Asn Leu Lys Phe Arg
        35   40   45
Gln Ala Leu Met Val Thr His Lys Glu Leu Ala Thr Ile Lys Lys Met
    50   55   60
Ala Ser Phe Gln Gly Thr Val Thr Cys Glu Ala Pro Asn Ser Arg Met
65   70   75   80
His His Phe Val Gly Cys Leu Glu Trp Asn Asp Lys Lys Tyr Ser Leu
                85   90   95
Asp Ile Gly Asn Leu Leu Leu Arg Gly Cys Arg Ile Arg Asn Thr Asp
            100   105   110
Thr Cys Tyr Gly Leu Val Ile Tyr Ala Asp Gly Tyr Met Phe Val Gly
        115   120   125
Phe Asp Thr Lys Ile Met Lys Asn Cys Gly Lys Ile His Leu Lys Arg
    130   135   140
Thr Lys Leu Asp Leu Leu Met Asn Lys Leu Val Val Val Ile Phe Ile
145   150   155   160
Ser Val Val Leu Val Cys Leu Val Leu Ala Phe Gly Phe Gly Phe Ser
                165   170   175
Val Lys Glu Phe Lys Asp His His Tyr Tyr Leu Ser Gly Val His Gly
            180   185   190
Ser Ser Val Ala Ala Glu Ser Phe Phe Val Phe Trp Ser Phe Leu Ile
            195   200   205
Leu Leu Ser Val Thr Ile Pro Met Ser Met Phe Ile Leu Ser Glu Phe
    210   215   220
Ile Tyr Leu Gly Asn Ser Val Phe Ile Asp Trp Asp Val Gln Met Tyr
225   230   235   240
Tyr Lys Pro Gln Asp Val Pro Ala Lys Ala Arg Ser Thr Ser Leu Asn
            245   250   255
Asp His Leu Gly Gln Val Glu Tyr Ile Phe Ser Asp Lys Thr Gly Thr
            260   265   270
Leu Thr Gln Asn Ile Leu Thr Phe Asn Lys Cys Cys Ile Ser Gly Arg
    275   280   285
Val Tyr Gly Glu Pro Leu Pro Leu Glu Gln Val Arg Arg Arg Glu Ala
    290   295   300
Ala Leu Pro Gln Cys Gly Pro Ala Ala Pro Arg Ala Asp Gln Arg Gly
305   310   315   320
Arg Gly Arg Ala Gly Val Leu Ala Pro Ala Gly His Leu Pro His Gly
            325   330   335
Asp Asp Gln Leu Leu Tyr Gln Ala Ala Ser Pro Asp Glu Gly Ala Leu

```
                340                     345                     350
     Val Thr Ala Ala Arg Asn Phe Gly Tyr Val Phe Leu Ser Arg Thr Gln
                355                     360                     365
     Asp Thr Val Thr Ile Met Glu Leu Gly Glu Glu Arg Val Tyr Gln Val
            370                     375                     380
     Leu Ala Ile Met Asp Phe Asn Ser Thr Arg Lys Arg Met Ser Val Leu
     385                     390                     395                     400
     Val Arg Lys Pro Glu Gly Ala Ile Cys Leu Tyr Thr Lys Gly Ala Asp
                        405                     410                     415
     Thr Val Ile Phe Glu Arg Leu His Arg Arg Gly Ala Met Glu Phe Ala
                    420                     425                     430
     Thr Glu Glu Ala Leu Ala Ala Phe Ala Gln Glu Thr Leu Arg Thr Leu
                435                     440                     445
     Cys Leu Ala Tyr Arg Glu Val Ala Glu Asp Ile Tyr Glu Asp Trp Gln
            450                     455                     460
     Gln Arg His Gln Glu Ala Ser Leu Leu Leu Gln Asn Arg Ala Gln Ala
     465                     470                     475                     480
     Leu Gln Gln Val Tyr Asn Glu Met Glu Gln Asp Leu Arg Leu Leu Gly
                        485                     490                     495
     Ala Thr Ala Ile Glu Asp Arg Leu Gln Asp Gly Val Pro Glu Thr Ile
                    500                     505                     510
     Lys Cys Leu Lys Lys Ser Asn Ile Lys Ile Trp Val Leu Thr Gly Asp
                515                     520                     525
     Lys Gln Glu Thr Ala Val Asn Ile Gly Phe Ala Cys Glu Leu Leu Ser
            530                     535                     540
     Glu Asn Met Leu Ile Leu Glu Glu Lys Glu Ile Ser Arg Ile Leu Glu
     545                     550                     555                     560
     Thr Tyr Trp Glu Asn Ser Asn Asn Leu Leu Thr Arg Glu Ser Leu Ser
                        565                     570                     575
     Gln Val Lys Leu Ala Leu Val Ile Asn Gly Asp Phe Leu Asp Lys Leu
                    580                     585                     590
     Leu Val Ser Leu Arg Lys Glu Pro Arg Ala Leu Ala Gln Asn Val Asn
                595                     600                     605
     Met Asp Glu Ala Trp Gln Glu Leu Gly Gln Ser Arg Arg Asp Phe Leu
            610                     615                     620
     Tyr Ala Arg Arg Leu Ser Leu Leu Cys Arg Arg Phe Gly Leu Pro Leu
     625                     630                     635                     640
     Ala Ala Pro Pro Ala Gln Asp Ser Arg Ala Arg Arg Ser Ser Glu Val
                        645                     650                     655
     Leu Gln Glu Arg Ala Phe Val Asp Leu Ala Ser Lys Cys Gln Ala Val
                    660                     665                     670
     Ile Cys Cys Arg Val Thr Pro Lys Gln Lys Ala Leu Ile Val Ala Leu
                675                     680                     685
     Val Lys Lys Tyr His Gln Val Val Thr Leu Ala Ile Gly Asp Gly Ala
            690                     695                     700
     Asn Asp Ile Asn Met Ile Lys Thr Ala Asp Val Gly Val Gly Leu Ala
     705                     710                     715                     720
     Gly Gln Glu Gly Met Gln Ala Val Gln Asn Ser Asp Phe Val Leu Gly
                        725                     730                     735
     Gln Phe Cys Phe Leu Gln Arg Leu Leu Leu Val His Gly Arg Trp Ser
                    740                     745                     750
     Tyr Val Arg Ile Cys Lys Phe Leu Arg Tyr Phe Phe Tyr Lys Ser Met
                755                     760                     765
     Ala Ser Met Met Val Gln Val Trp Phe Ala Cys Tyr Asn Gly Phe Thr
```

```
        770                      775                      780
Gly Gln Asp Val Ser Ala Glu Gln Ser Leu Glu Lys Pro Glu Leu Tyr
785                      790                      795                      800
Val Val Gly Gln Lys Asp Glu Leu Phe Asn Tyr Trp Val Phe Val Gln
                    805                      810                      815
Ala Ile Ala His Gly Val Thr Thr Ser Leu Val Asn Phe Phe Met Thr
                    820                      825                      830
Leu Trp Ile Ser Arg Asp Thr Ala Gly Pro Ala Ser Phe Ser Asp His
                835                      840                      845
Gln Ser Phe Ala Val Val Val Ala Leu Ser Cys Leu Leu Ser Ile Thr
                850                      855                      860
Met Glu Val Ile Leu Ile Ile Lys Tyr Trp Thr Ala Leu Cys Val Ala
865                      870                      875                      880
Thr Ile Leu Leu Ser Leu Gly Phe Tyr Ala Ile Met Thr Thr Thr Thr
                    885                      890                      895
Gln Ser Phe Trp Leu Phe Arg Met Pro Thr Ser Ala
                900                      905
```

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<210> 4551
<211> 361
<212> DNA
<213> Homo sapiens


<400> 4551
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60
atggaggggac catcggtcag ggtgaggaca ggaggaaggg ggtctagggc ccttcaggga
120
caggcagggg tggctttgcc tgtctcagag caggcctcag cagcacactg tccagtacca
180
ggcatcagtg agggtccaag aacttgcagc cagcagggac gacagggcag ggccccagg
240
agagacccca cacagcgcac atgggagagt ggatgccaaa ggtgggcagc ggggagggcg
300
cctgccaaac agtccctgtg tggtgtgccg cacgctgctg aggtctctgt gcggtgttgg
360
c
361


<210> 4552
<211> 100
<212> PRT
<213> Homo sapiens


<400> 4552
Met Glu Gly Pro Ser Val Arg Val Arg Thr Gly Gly Arg Gly Ser Arg
1                   5                       10                      15
Ala Leu Gln Gly Gln Ala Gly Val Ala Leu Pro Val Ser Glu Gln Ala
                20                      25                      30
Ser Ala Ala His Cys Pro Val Pro Gly Ile Ser Glu Gly Pro Arg Thr
            35                      40                      45
Cys Ser Gln Gln Gly Arg Gln Gly Arg Ala Pro Arg Arg Asp Pro Thr
        50                      55                      60
Gln Arg Thr Trp Glu Ser Gly Cys Gln Arg Trp Ala Ala Gly Arg Ala
```

3747

```
65                   70                   75                   80
Pro Ala Lys Gln Ser Leu Cys Gly Val Pro His Ala Ala Glu Val Ser
                85                   90                   95
Val Arg Cys Trp
            100


<210> 4553
<211> 2970
<212> DNA
<213> Homo sapiens


<400> 4553
gaattactca atctcctatg accatctata catactccac cttcaaaaag tacatcaata
60
ttatatcatt aaggaaatag taaccttctc ttctccaata tgcatgacat ttttggacaa
120
tgcaattgtg gcactggcac ttatttcagt gaagaaaaac tttgtggttc tatggcattc
180
atcatttgac aaatgcaagc atcttcctta tcaatcagct cctattgaac ttactagcac
240
tgactgtgga atccttaagg gcccattaca tttctgaaga agaaagctaa gatgaaggac
300
atgccactcc gaattcatgt gctacttggc ctagctatca ctacactagt acaagctgta
360
gataaaaaag tggattgtcc acggttatgt acgtgtgaaa tcaggccttg gtttacaccc
420
agatccattt atatggaagc atctacagtg gattgtaatg atttaggtct tttaactttc
480
ccagccagat tgccagctaa cacacagatt cttctcctac agactaacaa tattgcaaaa
540
attgaatact ccacagactt tccagtaaac cttactggcc tggatttatc tcaaaacaat
600
ttatcttcag tcaccaatat taatgtaaaa aagatgcctc agctcctttc tgtgtaccta
660
gaggaaaaca aacttactga actgcctgaa aaatgtctgt ccgaactgag caacttacaa
720
gaactctata ttaatcacaa cttgctttct acaatttcac ctggagcctt tattggccta
780
cataatcttc ttcgacttca tctcaattca aatagattgc agatgatcaa cagtaagtgg
840
tttgatgctc ttccaaatct agagattctg atgattgggg aaaatccaat tatcagaatc
900
aaagacatga actttaagcc tcttatcaat cttcgcagcc tggttatagc tggtataaac
960
ctcacagaaa taccagataa cgccttggtt ggactggaaa acttagaaag catctctttt
1020
tacgataaca ggcttattaa agtaccccat gttgctcttc aaaaagttgt aaatctcaaa
1080
tttttggatc taaataaaaa tcctattaat agaatacgaa ggggtgattt tagcaatatg
1140
ctacacttaa aagagttggg gataaataat atgcctgagc tgatttccat cgatagtctt
1200
gctgtggata acctgccaga tttaagaaaa atagaagcta ctaacaaccc tagattgtct
1260
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tacattcacc ccaatgcatt tttcagactc cccaagctgg aatcactcat gctgaacagc
1320
aatgctctca gtgccctgta ccatggtacc attgagtctc tgccaaacct caaggaaatc
1380
agcatacaca gtaaccccat caggtgtgac tgtgtcatcc gttggatgaa catgaacaaa
1440
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1500
ggtcagaatg ttcggcaagt gcatttcagg gacatgatgg aaatttgtct ccctcttata
1560
gctcctgaga gctttccttc taatctaaat gtagaagctg ggagctatgt ttcctttcac
1620
tgtagagcta ctgcagaacc acagcctgaa atctactgga taacaccttc tggtcaaaaa
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1740
aatggcgtaa ctcccaaaga agggggttta tatacttgta tagcaactaa cctagttggc
1800
gctgacttga agtctgttat gatcaaagtg gatggatctt ttccacaaga taacaatggc
1860
tctttgaata ttaaaataag agatattcag gccaattcag ttttggtgtc ctggaaagca
1920
agttctaaaa ttctcaaatc tagtgttaaa tggacagcct ttgtcaagac tgaaaattct
1980
catgctgcgc aaagtgctcg aataccatct gatgtcaagg tatataatct tactcatctg
2040
aatccatcaa ctgagtataa aatttgtatt gatattccca ccatctatca gaaaaacaga
2100
aaaaaatgtg taaatgtcac caccaaaggt ttgcaccctg atcaaaaaga gtatgaaaag
2160
aataatacca caacacttat ggcctgtctt ggaggccttc tggggattat tggtgtgata
2220
tgtcttatca gctgcctctc tccagaaatg aactgtgatg gtggacacag ctatgtgagg
2280
aattacttac agaaaccaac ctttgcatta ggtgagcttt atcctcctct gataaatctc
2340
tgggaagcag gaaaagaaaa aagtacatca ctgaaagtaa aagcaactgt tataggttta
2400
ccaacaaata tgtcctaaaa accaccaagg aaacctactc caaaaatgaa caaaaaaaaa
2460
aaaagcgaaa gactgcagtt gtgctaaaaa caaaacaaaa caaacaaaca aacaaaaaag
2520
taaaaaaaga ttactttcga gagagaagtt taagcttcac caatgctgct cctgaccaat
2580
ggaaatatgt acaacttcag cattttaagt aactggcttc aaggggtact gtggcaacca
2640
aataaaataa ctccattttc taaaactttc atgtaacttt tatgtctgga ctacagttca
2700
agtggacaaa aacatttctg tattttttt aagtaaataa gagtagttga actgagcaat
2760
acctcctcct gtgttgtatt acacatatta gccacgagtt tttgcagtga ccagataaac
2820
ttgaattgac acgtggtgta ataaaatgga caaattctgt agagtagaca cagtgagtat
2880
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gtggacctct tttataagga aaaatacatt ttggattaaa atcaattgct tctgtcttgt
2940
tttgtttcta aataaagaat aatttctggg
2970

<210> 4554
<211> 705
<212> PRT
<213> Homo sapiens

<400> 4554
Met Pro Leu Arg Ile His Val Leu Leu Gly Leu Ala Ile Thr Thr Leu
 1   5   10   15
Val Gln Ala Val Asp Lys Lys Val Asp Cys Pro Arg Leu Cys Thr Cys
            20   25   30
Glu Ile Arg Pro Trp Phe Thr Pro Arg Ser Ile Tyr Met Glu Ala Ser
        35   40   45
Thr Val Asp Cys Asn Asp Leu Gly Leu Leu Thr Phe Pro Ala Arg Leu
    50   55   60
Pro Ala Asn Thr Gln Ile Leu Leu Leu Gln Thr Asn Asn Ile Ala Lys
65   70   75   80
Ile Glu Tyr Ser Thr Asp Phe Pro Val Asn Leu Thr Gly Leu Asp Leu
                85   90   95
Ser Gln Asn Asn Leu Ser Ser Val Thr Asn Ile Asn Val Lys Lys Met
                100   105   110
Pro Gln Leu Leu Ser Val Tyr Leu Glu Glu Asn Lys Leu Thr Glu Leu
        115   120   125
Pro Glu Lys Cys Leu Ser Glu Leu Ser Asn Leu Gln Glu Leu Tyr Ile
    130   135   140
Asn His Asn Leu Leu Ser Thr Ile Ser Pro Gly Ala Phe Ile Gly Leu
145   150   155   160
His Asn Leu Leu Arg Leu His Leu Asn Ser Asn Arg Leu Gln Met Ile
                165   170   175
Asn Ser Lys Trp Phe Asp Ala Leu Pro Asn Leu Glu Ile Leu Met Ile
                180   185   190
Gly Glu Asn Pro Ile Ile Arg Ile Lys Asp Met Asn Phe Lys Pro Leu
            195   200   205
Ile Asn Leu Arg Ser Leu Val Ile Ala Gly Ile Asn Leu Thr Glu Ile
    210   215   220
Pro Asp Asn Ala Leu Val Gly Leu Glu Asn Leu Glu Ser Ile Ser Phe
225   230   235   240
Tyr Asp Asn Arg Leu Ile Lys Val Pro His Val Ala Leu Gln Lys Val
            245   250   255
Val Asn Leu Lys Phe Leu Asp Leu Asn Lys Asn Pro Ile Asn Arg Ile
            260   265   270
Arg Arg Gly Asp Phe Ser Asn Met Leu His Leu Lys Glu Leu Gly Ile
        275   280   285
Asn Asn Met Pro Glu Leu Ile Ser Ile Asp Ser Leu Ala Val Asp Asn
    290   295   300
Leu Pro Asp Leu Arg Lys Ile Glu Ala Thr Asn Asn Pro Arg Leu Ser
305   310   315   320
Tyr Ile His Pro Asn Ala Phe Phe Arg Leu Pro Lys Leu Glu Ser Leu
            325   330   335
Met Leu Asn Ser Asn Ala Leu Ser Ala Leu Tyr His Gly Thr Ile Glu

```
                      340                  345                  350
      Ser Leu Pro Asn Leu Lys Glu Ile Ser Ile His Ser Asn Pro Ile Arg
              355                  360                  365
      Cys Asp Cys Val Ile Arg Trp Met Asn Met Asn Lys Thr Asn Ile Arg
          370                  375                  380
      Phe Met Glu Pro Asp Ser Leu Phe Cys Val Asp Pro Pro Glu Phe Gln
      385                  390                  395                  400
      Gly Gln Asn Val Arg Gln Val His Phe Arg Asp Met Met Glu Ile Cys
                      405                  410                  415
      Leu Pro Leu Ile Ala Pro Glu Ser Phe Pro Ser Asn Leu Asn Val Glu
                      420                  425                  430
      Ala Gly Ser Tyr Val Ser Phe His Cys Arg Ala Thr Ala Glu Pro Gln
              435                  440                  445
      Pro Glu Ile Tyr Trp Ile Thr Pro Ser Gly Gln Lys Leu Leu Pro Asn
          450                  455                  460
      Thr Leu Thr Asp Lys Phe Tyr Val His Ser Glu Gly Thr Leu Asp Ile
      465                  470                  475                  480
      Asn Gly Val Thr Pro Lys Glu Gly Gly Leu Tyr Thr Cys Ile Ala Thr
                      485                  490                  495
      Asn Leu Val Gly Ala Asp Leu Lys Ser Val Met Ile Lys Val Asp Gly
                      500                  505                  510
      Ser Phe Pro Gln Asp Asn Asn Gly Ser Leu Asn Ile Lys Ile Arg Asp
              515                  520                  525
      Ile Gln Ala Asn Ser Val Leu Val Ser Trp Lys Ala Ser Ser Lys Ile
          530                  535                  540
      Leu Lys Ser Ser Val Lys Trp Thr Ala Phe Val Lys Thr Glu Asn Ser
      545                  550                  555                  560
      His Ala Ala Gln Ser Ala Arg Ile Pro Ser Asp Val Lys Val Tyr Asn
                      565                  570                  575
      Leu Thr His Leu Asn Pro Ser Thr Glu Tyr Lys Ile Cys Ile Asp Ile
              580                  585                  590
      Pro Thr Ile Tyr Gln Lys Asn Arg Lys Lys Cys Val Asn Val Thr Thr
              595                  600                  605
      Lys Gly Leu His Pro Asp Gln Lys Glu Tyr Glu Lys Asn Asn Thr Thr
          610                  615                  620
      Thr Leu Met Ala Cys Leu Gly Gly Leu Leu Gly Ile Ile Gly Val Ile
      625                  630                  635                  640
      Cys Leu Ile Ser Cys Leu Ser Pro Glu Met Asn Cys Asp Gly Gly His
                      645                  650                  655
      Ser Tyr Val Arg Asn Tyr Leu Gln Lys Pro Thr Phe Ala Leu Gly Glu
              660                  665                  670
      Leu Tyr Pro Pro Leu Ile Asn Leu Trp Glu Ala Gly Lys Glu Lys Ser
              675                  680                  685
      Thr Ser Leu Lys Val Lys Ala Thr Val Ile Gly Leu Pro Thr Asn Met
          690                  695                  700
      Ser
      705
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<210> 4555
<211> 1128
<212> DNA
<213> Homo sapiens

<400> 4555

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120
tggcccacct gggtgggagg ctgccaccgc ggcctgatca tgccctctgt gcccacacag
180
gtctctgagc ggcccctgat gttcctgttg gacactcctg gcgtgctggc tcctcggatt
240
gaaagtgtgg agacaggcct gaagctggcc ctgtgtggaa cggtgctgga ccacctggtc
300
ggggaggaga ccatggctga ctacctgctg tacaccctca acaaacacca gcgctttggg
360
tgagtgcagc actacggcct gggcagtgcc tgtgacaacg tagagcgcgt gctgaagagt
420
gtggctgtga agctggggaa gacgcagaag gtgaaggtgc tcacgggcac gggtaacgtg
480
aacgttattc agcctaacta tcctgcggca gcccgtgact tcctgcagac tttccgccgt
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720
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780
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900
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960
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1020
gaacctaaga aatgagcagg ttggcagcta gggtttgtgt tggaggcttt cggtccagtg
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1128

<210> 4556
<211> 67
<212> PRT
<213> Homo sapiens

<400> 4556
Met Pro Ser Val Pro Thr Gln Val Ser Glu Arg Pro Leu Met Phe Leu
 1   5   10   15
Leu Asp Thr Pro Gly Val Leu Ala Pro Arg Ile Glu Ser Val Glu Thr
            20   25   30
Gly Leu Lys Leu Ala Leu Cys Gly Thr Val Leu Asp His Leu Val Gly
        35   40   45
Glu Glu Thr Met Ala Asp Tyr Leu Leu Tyr Thr Leu Asn Lys His Gln
    50   55   60
Arg Phe Gly

65

<210> 4557
<211> 446
<212> DNA
<213> Homo sapiens

<400> 4557
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120
catctaggac attctcatcc ccctgagacc tcaagggcct tcctgcctcc tccctcagac
180
gtgagggtga gatcctgcct ctaccattgg agcgccacag cccacctgcc tcctctgtca
240
aaaaaacctc cttgtaccat ctctcacttg agacctctgc taggcctgcc tcctccatct
300
gacctccaca tcccatcagc agccaccctg ggcccctgca tgcactggcc tcctccctca
360
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446

<210> 4558
<211> 148
<212> PRT
<213> Homo sapiens

<400> 4558
Xaa Arg Val His Arg Lys Arg Cys Gln Asp Ser Leu Gly Ser Pro Arg
1   5   10   15
Arg Ala Gly Met Ala Cys Pro Ser Pro Leu Leu Thr Pro Ala Pro Ser
            20   25   30
Lys Ala Val Arg Cys Ala Gln Asp His Leu Gly His Ser His Pro Pro
            35   40   45
Glu Thr Ser Arg Ala Phe Leu Pro Pro Pro Ser Asp Val Arg Val Arg
    50   55   60
Ser Cys Leu Tyr His Trp Ser Ala Thr Ala His Leu Pro Pro Leu Ser
65   70   75   80
Lys Lys Pro Pro Cys Thr Ile Ser His Leu Arg Pro Leu Leu Gly Leu
                85   90   95
Pro Pro Pro Ser Asp Leu His Ile Pro Ser Ala Ala Thr Leu Gly Pro
            100   105   110
Cys Met His Trp Pro Pro Pro Ser Asp Ala Pro Cys Thr Ile Ser Leu
            115   120   125
Ala Leu Asp Ala Leu Leu Gly Leu Pro Pro Pro Ser Asp His His Ile
    130   135   140
Thr Ser Thr Arg
145

<210> 4559
<211> 919

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<212> DNA
<213> Homo sapiens

<400> 4559
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120
gctcctgtcc cctaggattg acaaaccaag ggctcagggc tcagctgtgt gccacgcagc
180
ggctgctgtg aggtgtgttc tggtagaagg ggtcagctga ggtcagggtt cttcccacgt
240
ggggatgcag gtgccgcagg ctctccatgg ggttgggggt ggcctccatg cagctgaccg
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360
cctggtctag acccttgggg atgttctcaa agtacccttg gttgtaggtg gtcaggtatc
420
gctgatccct gtcaggatca caggggctcc ggacatacat ggggttgtta aggctgaacc
480
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gcactctggg gttcagaatc ctttcattcc ctcggctgaa ggctgtttcc cgcttggagc
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720
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780
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919


<210> 4560
<211> 126
<212> PRT
<213> Homo sapiens

<400> 4560
Met Gln Gln Thr Asn Val Ala Leu Leu Gly Arg Glu Thr Val Gly Lys
1               5                   10                  15
Lys Glu Pro Thr Gly Phe Ser Leu Asn Asn Pro Met Tyr Val Arg Ser
            20                  25                  30
Pro Cys Asp Pro Asp Arg Asp Gln Arg Tyr Leu Thr Thr Tyr Asn Gln
            35                  40                  45
Gly Tyr Phe Glu Asn Ile Pro Lys Gly Leu Asp Gln Glu Gly Trp Thr
        50                  55                  60
Arg Gly Gly Ile Gln Pro Gln Met Pro Gly Gly Tyr Ala Leu Ser Gln
65                  70                  75                  80
Pro Val Ser Cys Met Glu Ala Thr Pro Asn Pro Met Glu Ser Leu Arg
```

3754

```
                 85                   90                   95
His Leu His Pro His Val Gly Arg Thr Leu Thr Ser Ala Asp Pro Phe
            100                  105                  110
Tyr Gln Asn Thr Pro His Ser Ser Arg Cys Val Ala His Ser
        115                  120                  125
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<210> 4561
<211> 4172
<212> DNA
<213> Homo sapiens

<400> 4561

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120
gcgacagtgt cttgccgggg agtagtagcc gggctggtaa ctggagtttg agattaggag
180
actttcagac ccttgtgcac aaagagcagg atgaagttaa aggaagtaga tcgtacagcc
240
atgcaggcat ggagccctgc ccagaatcac cccatttacc tagcaacagg aacatctgct
300
cagcaattgg atgcaacatt tagtacgaat gcttcccttg agatatttga attagacctc
360
tctgatccat ccttggatat gaaatcttgt gccacattct cctcttctca caggtaccac
420
aagttgattt gggggcctta taaaatggat tccaaaggag atgtctctgg agttctgatt
480
gcaggtggtg aaaatggaaa tattattctc tatgatcctt ctaaaattat agctggagac
540
aaggaagttg tgattgccca gaatgacaag catactggcc cagtgagagc cttggatgtg
600
aacattttcc agactaatct ggtagcttct ggtgctaatg aatctgaaat ctacatatgg
660
gatctaaata attttgcaac cccaatgaca ccaggagcca aaacacagcc gccagaagat
720
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900
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1020
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aacacaggag aggtgttata tgaacttccc accaacacac agtggtgctt cgatattcag
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1200
tattctatca tgggaggaag cacagatggt ttaagacaga aacaagttga caagctttca
1260
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1320

ccacagcaga ctgctcagca tagtatagtg ctgcctctga agaagccgcc caagtggatt
1380

cgaaggcctg ttggtgcttc tttttcattt ggaggcaaac tggttacgtt tgagaatgtc
1440

agaatgcctt ctcatcaggg agctgagcag cagcagcagc agcaccatgt gttcattagt
1500

caggttgtaa cagaaaagga gttcctcagc cgatcagacc aacttcagca ggctgtgcag
1560

tcacaaggat ttatcaatta ttgccaaaaa aaaattgatg cttctcagac tgaatttgag
1620

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1680

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1740

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1800

attgatggtt taattactca ggctttgctg acgggcaatt ttgagagtgc tgttgacctt
1860

tgtttacatg ataaccgcat ggccgatgcc attatattgg ccatagcagg tggacaagaa
1920

ctcttggctc gaacccagaa aaaatacttc gcaaaatccc aaagcaaaat taccaggctc
1980

atcactgcag tggtgatgaa gaactggaaa gagattgttg agtcttgtga tcttaaaaat
2040

tggagagagg ctttagctgc agtattgact tatgcaaagc cggatgaatt ttcagccctt
2100

tgtgatcttt tgggaaccag gcttgaaaat gaaggagata gcctcctgca gactcaagca
2160

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2220

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2280

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2340

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2400

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2460

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2520

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2580

caacaatatt atccccatgg agaaaatcct ccacctccgg gtttcataat gcatggaaat
2640

gttaatccaa atgctgctgg tcagcttccc acatctccag gtcatatgca cacccaggta
2700

ccaccttatc cacagccaca gccttatcaa ccagcccagc cgtatccctt cggaacaggg
2760

gggtcagcaa tgtatcgacc tcagcagcct gttgctcctc ctacttcaaa cgcttaccct
2820

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2880

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3540
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4172
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<210> 4562
<211> 1182
<212> PRT
<213> Homo sapiens

<400> 4562

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Met Lys Leu Lys Glu Val Asp Arg Thr Ala Met Gln Ala Trp Ser Pro
1               5                   10                  15
Ala Gln Asn His Pro Ile Tyr Leu Ala Thr Gly Thr Ser Ala Gln Gln
```

3757

```
                20                      25                      30
Leu Asp Ala Thr Phe Ser Thr Asn Ala Ser Leu Glu Ile Phe Glu Leu
         35                      40                      45
Asp Leu Ser Asp Pro Ser Leu Asp Met Lys Ser Cys Ala Thr Phe Ser
         50                      55                      60
Ser Ser His Arg Tyr His Lys Leu Ile Trp Gly Pro Tyr Lys Met Asp
65                      70                      75                      80
Ser Lys Gly Asp Val Ser Gly Val Leu Ile Ala Gly Gly Glu Asn Gly
                85                      90                      95
Asn Ile Ile Leu Tyr Asp Pro Ser Lys Ile Ile Ala Gly Asp Lys Glu
              100                     105                     110
Val Val Ile Ala Gln Asn Asp Lys His Thr Gly Pro Val Arg Ala Leu
              115                     120                     125
Asp Val Asn Ile Phe Gln Thr Asn Leu Val Ala Ser Gly Ala Asn Glu
         130                     135                     140
Ser Glu Ile Tyr Ile Trp Asp Leu Asn Asn Phe Ala Thr Pro Met Thr
145                     150                     155                     160
Pro Gly Ala Lys Thr Gln Pro Pro Glu Asp Ile Ser Cys Ile Ala Trp
              165                     170                     175
Asn Arg Gln Val Gln His Ile Leu Ala Ser Ala Ser Pro Ser Gly Arg
              180                     185                     190
Ala Thr Val Trp Asp Leu Arg Glu Asn Glu Pro Ile Ile Lys Val Ser
         195                     200                     205
Asp His Ser Asn Arg Met His Cys Ser Gly Leu Ala Trp His Pro Asp
         210                     215                     220
Val Ala Thr Gln Met Val Leu Ala Ser Glu Asp Asp Arg Leu Pro Val
225                     230                     235                     240
Ile Gln Met Trp Asp Leu Arg Phe Ala Ser Ser Pro Leu Arg Val Leu
              245                     250                     255
Glu Asn His Ala Arg Gly Ile Leu Ala Ile Ala Trp Ser Met Ala Asp
              260                     265                     270
Pro Glu Leu Leu Leu Ser Cys Gly Lys Asp Ala Lys Ile Leu Cys Ser
         275                     280                     285
Asn Pro Asn Thr Gly Glu Val Leu Tyr Glu Leu Pro Thr Asn Thr Gln
         290                     295                     300
Trp Cys Phe Asp Ile Gln Trp Cys Pro Arg Asn Pro Ala Val Leu Ser
305                     310                     315                     320
Ala Ala Ser Phe Asp Gly Arg Ile Ser Val Tyr Ser Ile Met Gly Gly
              325                     330                     335
Ser Thr Asp Gly Leu Arg Gln Lys Gln Val Asp Lys Leu Ser Ser Ser
              340                     345                     350
Phe Gly Asn Leu Asp Pro Phe Gly Thr Gly Gln Pro Leu Pro Pro Leu
         355                     360                     365
Gln Ile Pro Gln Gln Thr Ala Gln His Ser Ile Val Leu Pro Leu Lys
         370                     375                     380
Lys Pro Pro Lys Trp Ile Arg Arg Pro Val Gly Ala Ser Phe Ser Phe
385                     390                     395                     400
Gly Gly Lys Leu Val Thr Phe Glu Asn Val Arg Met Pro Ser His Gln
              405                     410                     415
Gly Ala Glu Gln Gln Gln Gln His His Val Phe Ile Ser Gln Val
              420                     425                     430
Val Thr Glu Lys Glu Phe Leu Ser Arg Ser Asp Gln Leu Gln Gln Ala
         435                     440                     445
Val Gln Ser Gln Gly Phe Ile Asn Tyr Cys Gln Lys Lys Ile Asp Ala
```

3758

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        450              455              460
Ser Gln Thr Glu Phe Glu Lys Asn Val Trp Ser Phe Leu Lys Val Asn
465              470              475              480
Phe Glu Asp Asp Ser Arg Gly Lys Tyr Leu Glu Leu Leu Gly Tyr Arg
                485              490              495
Lys Glu Asp Leu Glu Lys Xaa Gln Asp Ile Lys Glu Glu Lys Glu Glu
            500              505              510
Ser Glu Phe Leu Pro Ser Ser Gly Gly Thr Phe Asn Ile Ser Val Ser
        515              520              525
Gly Asp Ile Asp Gly Leu Ile Thr Gln Ala Leu Leu Thr Gly Asn Phe
        530              535              540
Glu Ser Ala Val Asp Leu Cys Leu His Asp Asn Arg Met Ala Asp Ala
545              550              555              560
Ile Ile Leu Ala Ile Ala Gly Gly Gln Glu Leu Leu Ala Arg Thr Gln
            565              570              575
Lys Lys Tyr Phe Ala Lys Ser Gln Ser Lys Ile Thr Arg Leu Ile Thr
        580              585              590
Ala Val Val Met Lys Asn Trp Lys Glu Ile Val Glu Ser Cys Asp Leu
        595              600              605
Lys Asn Trp Arg Glu Ala Leu Ala Ala Val Leu Thr Tyr Ala Lys Pro
610              615              620
Asp Glu Phe Ser Ala Leu Cys Asp Leu Leu Gly Thr Arg Leu Glu Asn
625              630              635              640
Glu Gly Asp Ser Leu Leu Gln Thr Gln Ala Cys Leu Cys Tyr Ile Cys
            645              650              655
Ala Gly Asn Val Glu Lys Leu Val Ala Cys Trp Thr Lys Ala Gln Asp
            660              665              670
Gly Ser His Pro Leu Ser Leu Gln Asp Leu Ile Glu Lys Val Val Ile
        675              680              685
Leu Arg Lys Ala Val Gln Leu Thr Gln Ala Met Asp Thr Ser Thr Val
    690              695              700
Gly Val Leu Leu Ala Ala Lys Met Ser Gln Tyr Ala Asn Leu Leu Ala
705              710              715              720
Ala Gln Gly Ser Ile Ala Ala Ala Leu Ala Phe Leu Pro Asp Asn Thr
            725              730              735
Asn Gln Pro Asn Ile Met Gln Leu Arg Asp Arg Leu Cys Arg Ala Gln
            740              745              750
Gly Glu Pro Val Ala Gly His Glu Ser Pro Lys Ile Pro Tyr Glu Lys
        755              760              765
Gln Gln Leu Pro Lys Gly Arg Pro Gly Pro Val Ala Gly His His Gln
    770              775              780
Met Pro Arg Val Gln Thr Gln Gln Tyr Tyr Pro His Gly Glu Asn Pro
785              790              795              800
Pro Pro Pro Gly Phe Ile Met His Gly Asn Val Asn Pro Asn Ala Ala
            805              810              815
Gly Gln Leu Pro Thr Ser Pro Gly His Met His Thr Gln Val Pro Pro
        820              825              830
Tyr Pro Gln Pro Gln Pro Tyr Gln Pro Ala Gln Pro Tyr Pro Phe Gly
        835              840              845
Thr Gly Gly Ser Ala Met Tyr Arg Pro Gln Gln Pro Val Ala Pro Pro
    850              855              860
Thr Ser Asn Ala Tyr Pro Asn Thr Pro Tyr Ile Ser Ser Ala Ser Ser
865              870              875              880
Tyr Thr Gly Gln Ser Gln Leu Tyr Ala Ala Gln His Gln Ala Ser Ser
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                        885                  890                  895
Pro Thr Ser Ser Pro Ala Thr Ser Phe Pro Pro Pro Pro Ser Ser Gly
            900                  905                  910
Ala Ser Phe Gln His Gly Gly Pro Gly Ala Pro Pro Ser Ser Ser Ala
        915                  920                  925
Tyr Ala Leu Pro Pro Gly Thr Thr Gly Thr Leu Pro Ala Ala Ser Glu
    930                  935                  940
Leu Pro Ala Ser Gln Arg Thr Gly Pro Gln Asn Gly Trp Asn Asp Pro
945                  950                  955                  960
Pro Ala Leu Asn Arg Val Pro Lys Lys Lys Met Pro Glu Asn Phe
            965                  970                  975
Met Pro Pro Val Pro Ile Thr Ser Pro Ile Met Asn Pro Leu Gly Asp
            980                  985                  990
Pro Gln Ser Gln Met Leu Gln Gln Gln Pro Ser Ala Pro Val Pro Leu
        995                  1000                 1005
Ser Ser Gln Ser Ser Phe Pro Gln Pro His Leu Pro Gly Gly Gln Pro
    1010                 1015                 1020
Phe His Gly Val Gln Gln Pro Leu Gly Gln Thr Gly Met Pro Pro Ser
1025                 1030                 1035                 1040
Phe Ser Lys Pro Asn Ile Glu Gly Ala Pro Gly Ala Pro Ile Gly Asn
            1045                 1050                 1055
Thr Phe Gln His Val Gln Ser Leu Pro Thr Lys Lys Ile Thr Lys Lys
            1060                 1065                 1070
Pro Ile Pro Asp Glu His Leu Ile Leu Lys Thr Thr Phe Glu Asp Leu
            1075                 1080                 1085
Ile Gln Arg Cys Leu Ser Ser Ala Thr Asp Pro Gln Thr Lys Arg Lys
        1090                 1095                 1100
Leu Asp Asp Ala Ser Lys Arg Leu Glu Phe Leu Tyr Asp Lys Leu Arg
1105                 1110                 1115                 1120
Glu Gln Thr Leu Ser Pro Thr Ile Thr Ser Gly Leu His Asn Ile Ala
            1125                 1130                 1135
Arg Ser Ile Glu Thr Arg Asn Tyr Ser Glu Gly Leu Thr Met His Thr
            1140                 1145                 1150
His Ile Val Ser Thr Ser Asn Phe Ser Glu Thr Ser Ala Phe Met Pro
        1155                 1160                 1165
Val Leu Lys Val Val Leu Thr Gln Ala Asn Lys Leu Gly Val
    1170                 1175                 1180
```

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<210> 4563
<211> 2037
<212> DNA
<213> Homo sapiens

<400> 4563
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120
caactgcagg ttctgcattc agcttttctg ccccaactaa cacaggcact actggactct
180
ttggtggtac tcagaacaaa ggttttggat ttggtactgg ttttggcaca acaacgggaa
240
ctagtactgg tttaggtact ggtttgggaa ctggactggg atttggagga tttaatacac
300
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420
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480
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540
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660
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720
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780
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840
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900
gtagccaaaa ttgcacaata caagaggaaa ctcatggatc tttcccatag aactttacag
960
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1020
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1140
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1200
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1260
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1320
cagttcacaa acttgtgtaa aggtttgtga aatgcatctt cttactgcat cagaccttcc
1380
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1440
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1620
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1680
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1740
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1800
aaagaaaatc caaaagcatt taatgttttg tttttgttct ataaagatat gaaaatgtat
1860
ttttatatta ttttacttat ttggaattta cagagcacac ctaagcaatt aggatataac
1920

3761

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1980
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2037

<210> 4564
<211> 354
<212> PRT
<213> Homo sapiens

<400> 4564
Val Leu Val Trp Glu Leu Asp Trp Asp Leu Glu Asp Leu Ile His Ser
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Ser Ser Ser Lys Leu Ala Val Gly Tyr Ser Cys Met Pro Ser Asn Lys
                20   25   30
Asp Glu Asp Gly Leu Val Val Leu Val Phe Asn Lys Lys Glu Thr Glu
                35   40   45
Ile Arg Ser Gln Gln Gln Gln Leu Val Glu Ser Leu His Lys Val Leu
        50   55   60
Gly Gly Asn Gln Thr Leu Thr Val Asn Val Glu Gly Thr Lys Thr Leu
65   70   75   80
Pro Asp Asp Gln Thr Glu Val Val Ile Tyr Val Val Glu Arg Ser Pro
                85   90   95
Asn Gly Thr Ser Arg Arg Val Pro Ala Thr Thr Leu Tyr Ala His Phe
                100   105   110
Glu Gln Ala Asn Ile Lys Thr Gln Leu Gln Gln Leu Gly Val Thr Leu
            115   120   125
Ser Met Thr Arg Thr Glu Leu Ser Pro Ala Gln Ile Arg Gln Leu Leu
        130   135   140
Gln Asn Pro Pro Ala Gly Val Asp Pro Ile Ile Trp Glu Gln Ala Lys
145   150   155   160
Val Asp Asn Pro Asp Ser Glu Lys Leu Ile Pro Val Pro Met Val Gly
                165   170   175
Phe Lys Glu Leu Leu Arg Arg Leu Lys Val Gln Asp Gln Met Thr Lys
            180   185   190
Gln His Gln Thr Arg Leu Asp Ile Ile Ser Glu Asp Ile Ser Glu Leu
            195   200   205
Gln Lys Asn Gln Thr Thr Ser Val Ala Lys Ile Ala Gln Tyr Lys Arg
        210   215   220
Lys Leu Met Asp Leu Ser His Arg Thr Leu Gln Val Leu Ile Lys Gln
225   230   235   240
Glu Ile Gln Arg Lys Ser Gly Tyr Ala Ile Gln Ala Asp Glu Glu Gln
                245   250   255
Leu Arg Val Gln Leu Asp Thr Ile Gln Gly Glu Leu Asn Ala Pro Thr
                260   265   270
Gln Phe Lys Gly Arg Leu Asn Glu Leu Met Ser Gln Ile Arg Met Gln
            275   280   285
Asn His Phe Gly Ala Val Arg Ser Glu Glu Arg Tyr Tyr Ile Asp Ala
        290   295   300
Asp Leu Leu Arg Glu Ile Lys Gln His Leu Lys Gln Gln Gln Glu Gly
305   310   315   320
Leu Ser His Leu Ile Ser Ile Ile Lys Asp Asp Leu Glu Asp Ile Lys
                325   330   335
Leu Val Glu His Gly Leu Asn Glu Thr Ile His Ile Arg Gly Gly Val

3762

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        Phe Ser


        <210> 4565
        <211> 2344
        <212> DNA
        <213> Homo sapiens


        <400> 4565
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        agtgccattg agctcaccaa aatgttctgt gaaatcctgc aggttgggga actaccaaat
        120
        gaaggacgca atgactacca cccgatgttc tttacccatg accgagcctt tgaagagctc
        180
        tttggaatct gcatccagct gttgaacaag acctggaagg agatgagggc aacagcagag
        240
        gacttcaaca aggttatgca agtcgtccga gagcaaatca ctcgagcttt gccctccaaa
        300
        cccaactctt tggatcagtt caagagcaaa ttgcgtagcc tgagttactc tgagattcta
        360
        cgactgcgcc agtctgagag gatgagtcag gatgacttcc agtccccgcc aattgtggag
        420
        ctgagggaga agatccagcc cgagatcctt gagctgatca agcagcagcg cctgaaccgg
        480
        ctctgtgagg gcagcagctt ccgaaagatt gggaaccgcc gaaggcaaga acggttctgg
        540
        tactgccggt tggcactgaa ccacaaggtc cttcactatg gtgacttgga tgacaaccca
        600
        caaggggagg tgacatttga atccctgcag gagaaaattc ctgttgcaga cattaaggcc
        660
        attgtcactg ggaaagattg tccccacatg aaagagaaaa gtgctctgaa acagaacaag
        720
        gaggtgttgg aattggcctt ctccatcctg tatgaccctg atgagacctt aaacttcatc
        780
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        840
        gacatgtcca gtgagctgac caagagtgac ctggacaccc tgctgagcat ggagatgaag
        900
        ctgcggctcc tggacctgga aacatccag attcccgaag ccccacccc catccccaag
        960
        gagcccagca gctatgactt tgtctatcac tatggctgag cctggagcca gaaacgacgg
        1020
        tacccaggag aagggatttt gggcccagga gaaacactta cattctggtg ccttgtcttt
        1080
        tgcttgtaca gaatctgtag tgattttggt ggccagtaaa tgccagccat ttctcaaacc
        1140
        cacctcggac cacccagagt ttcctcttgg tccctgtcta ctaagagtca tgaaggcagg
        1200
        gtgctctgcc cactccatca ccatgaagcc tgggattggg ccacgaggaa caaacagcag
        1260
        atgcccttgc cttccagtcc aagaaactgc ttcttgaaat ggatttaaca acagccactc
        1320
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accttttcct cctgagcctg ctctctgatc agctggatcc ccacgtgagc aacagctggc
1380
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1440
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1560
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1680
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1740
gtggtgaggt cactagattc tactgctctt cccccacatt aatacctttt ccttcctcag
1800
agagaaatct cccctaacct gaattgcagc cccctccagt ttgctttcct ttggccttcc
1860
agaccccagg aagttggcct tcccttccta gtgctatggt ttctgccatt ggccatgatt
1920
tcagggagct ggctgaggcc ggctgaggcc acacctgtgc cagtggggct tccctggtgc
1980
tgcagcactt gtaaaccaca cacacagcct ctctccctgg acatacgtta gcacattggc
2040
attcagtatt ggtggcctgg catggtaggt actacccaat gaagagtgta ctatatattt
2100
tcattactat aggccatact tatacagacg tgtatatata tttatataag atctacctat
2160
cttaggatgg aaccttgggg aaaaataaaa ttgaggggaa gtaaaaagta tgtaacactt
2220
ccagttgtga gccaagattg taaccagaga gcagccagga gcttcctgtc agtaaccatg
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2340
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2344

<210> 4566
<211> 247
<212> PRT
<213> Homo sapiens

<400> 4566
Met Gln Val Val Arg Glu Gln Ile Thr Arg Ala Leu Pro Ser Lys Pro
 1   5   10   15
Asn Ser Leu Asp Gln Phe Lys Ser Lys Leu Arg Ser Leu Ser Tyr Ser
             20   25   30
Glu Ile Leu Arg Leu Arg Gln Ser Glu Arg Met Ser Gln Asp Asp Phe
         35   40   45
Gln Ser Pro Pro Ile Val Glu Leu Arg Glu Lys Ile Gln Pro Glu Ile
     50   55   60
Leu Glu Leu Ile Lys Gln Gln Arg Leu Asn Arg Leu Cys Glu Gly Ser
65   70   75   80
Ser Phe Arg Lys Ile Gly Asn Arg Arg Arg Gln Glu Arg Phe Trp Tyr

			85					90						95	
Cys	Arg	Leu	Ala	Leu	Asn	His	Lys	Val	Leu	His	Tyr	Gly	Asp	Leu	Asp

```
                   85                     90                     95
Cys Arg Leu Ala Leu Asn His Lys Val Leu His Tyr Gly Asp Leu Asp
            100             105             110
Asp Asn Pro Gln Gly Glu Val Thr Phe Glu Ser Leu Gln Glu Lys Ile
            115             120             125
Pro Val Ala Asp Ile Lys Ala Ile Val Thr Gly Lys Asp Cys Pro His
        130             135             140
Met Lys Glu Lys Ser Ala Leu Lys Gln Asn Lys Glu Val Leu Glu Leu
145             150             155             160
Ala Phe Ser Ile Leu Tyr Asp Pro Asp Glu Thr Leu Asn Phe Ile Ala
                165             170             175
Pro Asn Lys Tyr Glu Tyr Cys Ile Trp Ile Asp Gly Leu Ser Ala Leu
            180             185             190
Leu Gly Lys Asp Met Ser Ser Glu Leu Thr Lys Ser Asp Leu Asp Thr
            195             200             205
Leu Leu Ser Met Glu Met Lys Leu Arg Leu Leu Asp Leu Glu Asn Ile
            210             215             220
Gln Ile Pro Glu Ala Pro Pro Pro Ile Pro Lys Glu Pro Ser Ser Tyr
225             230             235             240
Asp Phe Val Tyr His Tyr Gly
                245
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<210> 4567
<211> 1211
<212> DNA
<213> Homo sapiens

<400> 4567
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120
cagtctgttc aacaagtggg accccagggc cttctgtatg ttcagcaaag agagcttgca
180
gtgacctccc caaaggatgg ctccatctcc attctgggtt ctgatgatgc cactacttgt
240
cacattgtgg tcctgaggca cacaggtaat ggggccacct gcttgacaca ttgtgacgga
300
accgacacca aagctgaggt ccccttgatc atgaactcca taaaatcctt ttctgaccac
360
gctcaatgtg gaaggtgaga tctacgctgc tctcataggc tggaagtaca ccttgttgga
420
ggcttcagtg acgacaggca gttgtcacaa aaactcactc atcaacttct tagtgaattt
480
gacaggcaag aagatgacat tcacttagtg acattatgtg tgacagaatt aaatgaccgg
540
gaagaaaacg aaaaccactt ccagtaata tatggcattg ctgtcaacat taagactgca
600
gagatttaca gagcatcctt tcaagatcgg ggtccggagg agcagcttcg tgctgcgcga
660
actttagcag gaggaccaat gattagcatt tatgatgcag agacagaaca acttcgtata
720
ggaccgtact cctggacacc atttccacat gtggatttct ggttgcacca agatgacaag
780

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caaatactag agaatctttc cacttcgcct ctggctgagc caccccactt tgttgaacat
840
attagatcta ccttgatgtt tttaaaaaaa cacccatctc cagctcacac actgttttct
900
ggaaataaag ccctactcta caaaaaaaat gaagatggct tgtgggaaaa gatctcttct
960
ccaggaagtt aaaaaacatg aattaccaaa gaaagcacct tcttggcctg acagaccatt
1020
ggtggggctg gcacgaatcc agatctggaa cctacatctg ttgggtctta ggtcttctcc
1080
ttccttcctc agtgtttttc aaatgacttt catcaaatga ctttcaaaat aaaaccttat
1140
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1200
aaaaaaaaaa a
1211
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<210> 4568
<211> 120
<212> PRT
<213> Homo sapiens
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```
<400> 4568
Met Pro Leu Leu Val Glu Gly Arg Arg Val Arg Leu Pro Gln Ser Ala
 1               5                   10                  15
Gly Asp Leu Val Arg Ala His Pro Pro Leu Glu Glu Arg Ala Arg Leu
            20                  25                  30
Leu Arg Gly Gln Ser Val Gln Gln Val Gly Pro Gln Gly Leu Leu Tyr
        35                  40                  45
Val Gln Gln Arg Glu Leu Ala Val Thr Ser Pro Lys Asp Gly Ser Ile
    50                  55                  60
Ser Ile Leu Gly Ser Asp Asp Ala Thr Thr Cys His Ile Val Val Leu
65                  70                  75                  80
Arg His Thr Gly Asn Gly Ala Thr Cys Leu Thr His Cys Asp Gly Thr
                85                  90                  95
Asp Thr Lys Ala Glu Val Pro Leu Ile Met Asn Ser Ile Lys Ser Phe
            100                 105                 110
Ser Asp His Ala Gln Cys Gly Arg
        115                 120
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```
<210> 4569
<211> 1797
<212> DNA
<213> Homo sapiens
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<400> 4569
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ttgttcagaa gagcagccag catcaccctc gccactcaaa cctggcacat acgcttcgga
120
gacaatggcc tcgggaccct catgctgctg ggcccaggag agacagttct gaggcagaaa
180
ctcggcgtcc aaggggggcc gcgggtcagg cactgtggtg aagggaacgc cggggagtcc
240
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ggccccacct tgcagctggg gacacggggg cgcaaacaga gggggcaggc tagtgtcccg
300
ctgccccagg aacagacctc agggccccag gagggtctgc aggcagctag gagcctgcca
360
agtgctggtg gaagtagagg ccgaaaaggc tggcgagcag ctggcaggca gccgtccacc
420
agatgaggta ggccaggacg ccacggagga agaggggagt aagcaggcca cccagggccc
480
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540
gctggctgag ganntgggtc gggggatagt agaggagctg ggcccaggcc ccaggaatag
600
cctcccagcg tcttgagcag aagtgtgcag ttgagggtga ggatgagcgc gtcaggtact
660
gcaagctcac cacggtcaca tagcagtaga ctcggaccac cctctgctgg atttcacggg
720
cttcgatgcg gccagcctcc cttcgcagct gctccacccg ggccttggcc aggcacaggt
780
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1020
agtgcgtccc ggtgggtctg ggccagccgc aggcctggga aggtgaggaa ggcacccagc
1080
acagagccca ccactgccag tcccacgcgg atagccagct tggccacagg aagcgcccag
1140
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1200
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1260
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1320
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1380
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1500
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1560
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1620
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1680
aaactgccgt tacagagcag ccagcgcgcg aaggagcagt gtggcgccag cctgtgcatg
1740
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1797
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<210> 4570

<211> 141
<212> PRT
<213> Homo sapiens

<400> 4570
Xaa Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Leu Lys Ile Gly
1   5   10   15
Met Leu Leu Tyr Leu Phe Arg Arg Ala Ala Ser Ile Thr Leu Ala Thr
            20   25   30
Gln Thr Trp His Ile Arg Phe Gly Asp Asn Gly Leu Gly Thr Leu Met
            35   40   45
Leu Leu Gly Pro Gly Glu Thr Val Leu Arg Gln Lys Leu Gly Val Gln
        50   55   60
Gly Gly Pro Arg Val Arg His Cys Gly Glu Gly Asn Ala Gly Glu Ser
65   70   75   80
Gly Pro Thr Leu Gln Leu Gly Thr Arg Gly Arg Lys Gln Arg Gly Gln
                85   90   95
Ala Ser Val Pro Leu Pro Gln Glu Gln Thr Ser Gly Pro Gln Glu Gly
            100   105   110
Leu Gln Ala Ala Arg Ser Leu Pro Ser Ala Gly Gly Ser Arg Gly Arg
            115   120   125
Lys Gly Trp Arg Ala Ala Gly Arg Gln Pro Ser Thr Arg
        130   135   140

<210> 4571
<211> 1084
<212> DNA
<213> Homo sapiens

<400> 4571
ngcgcgccgc catgggcctg gccgggctgc aggagaacgt atttaccggg cagtcaaaga
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tctattccta catgagcccg aacaaatgct ctggaatgcg tttccccctt caggaagaga
120
actcagttac acatcacgaa gtcaaatgcc aggggaaacc attagccgga atctacagga
180
aacgagaaga gaaaagaaat gctgggaacg cagtacggag cgccatgaag tccgaggaac
240
agaagatcaa agacgccagg aaaggtcccc tggtaccttt tccaaaccaa aaatctgaag
300
cagcagaacc tccaaaaact ccaccctcat cttgtgattc caccaatgca gccatcgcca
360
agcaagccct gaaaaagccc atcaagggca acaggccccc cgaaaaaaa agctcaagga
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540
aaggaagaag gaatgaagat tgacctcatc gatggcaaag cagggggtgt gattgccacc
600
aagcagttct cccgggggtga ctttgtggtg aataccacg gggacctcat cgagatcacc
660
gacgccaaga aacgggaggc tctgtacgca caggacccctt ccacgggctg ctacatgtac
720

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tattttcagt atctgagcaa aacctactgg tgagtccact gttgcttaga gtggctttttc
780
tgtcctctgg gcagtgagga gaggccaaag ggccaggaac tcctgattct gtttggtggc
840
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900
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960
gctcaaagaa ttctcctccc tcagcctcca gagtagccca gctaattttt ttttttctgta
1020
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1080
gacc
1084


<210> 4572
<211> 126
<212> PRT
<213> Homo sapiens


<400> 4572
Lys Ser Pro Ser Arg Ala Asn Arg Pro Pro Glu Lys Lys Ala Gln Gly
1               5                   10                  15
Lys Thr Gln Gln Asn Arg Lys Leu Thr Asp Phe Tyr Pro Val Arg Arg
            20                  25                  30
Ser Ser Arg Lys Ser Lys Ala Glu Leu Gln Ser Glu Glu Arg Lys Arg
            35                  40                  45
Ile Asp Glu Leu Ile Glu Ser Gly Lys Glu Glu Gly Met Lys Ile Asp
        50                  55                  60
Leu Ile Asp Gly Lys Gly Arg Gly Val Ile Ala Thr Lys Gln Phe Ser
65                  70                  75                  80
Arg Gly Asp Phe Val Val Glu Tyr His Gly Asp Leu Ile Glu Ile Thr
                85                  90                  95
Asp Ala Lys Lys Arg Glu Ala Leu Tyr Ala Gln Asp Pro Ser Thr Gly
            100                 105                 110
Cys Tyr Met Tyr Tyr Phe Gln Tyr Leu Ser Lys Thr Tyr Trp
            115                 120                 125


<210> 4573
<211> 309
<212> DNA
<213> Homo sapiens


<400> 4573
cccggagatg gaggcctcca ggaccaagtc ggtgcttggg ggcttcccgg gcccaccggc
60
cccaagggag atgccggcag tcggggccca atggggatga gaggcccacc aggtccacag
120
ggcccccccag ggagccctgg ccgggctgga gctgtgggca cccctggaaa aaggggacct
180
tctggcccac aaggccttct tggcccccct gggcccccag ccctgttgg gccacccat
240
gcccggatct cccagcatgg agatccattg ctgtccaaca ccttcactga gaccaaccc
300
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ttcacgcgt
309

<210> 4574
<211> 103
<212> PRT
<213> Homo sapiens

<400> 4574
Pro Gly Asp Gly Gly Leu Gln Asp Gln Val Gly Ala Trp Gly Leu Pro
1   5   10   15
Gly Pro Thr Gly Pro Lys Gly Asp Ala Gly Ser Arg Gly Pro Met Gly
            20   25   30
Met Arg Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly Ser Pro Gly Arg
        35   40   45
Ala Gly Ala Val Gly Thr Pro Gly Lys Arg Gly Pro Ser Gly Pro Gln
    50   55   60
Gly Leu Leu Gly Pro Pro Gly Pro Pro Ala Pro Val Gly Pro Pro His
65   70   75   80
Ala Arg Ile Ser Gln His Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr
                85   90   95
Glu Thr Asn Pro Phe Thr Arg
            100

<210> 4575
<211> 1068
<212> DNA
<213> Homo sapiens

<400> 4575
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60
cactcaccca aagcgctggt gtttgttgag ggtgtacagc aggtagtcag ccatggtctc
120
ctccccgacc aggtggtcca gcaccgttcc acacagggcc agcttcaggc ctgtctccac
180
actttcaatc cgaggagcca gcacgccagg agtgtccaac aggaacatca ggggccgctc
240
agagacctga attttggaca tcacagctct ggtgatccca ggctcgccac ccaccctggt
300
ggctttccct ttcctgaggt gctgcctccg gagggagttg atgagggagg acttgcccac
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420
gcttctccca atcagttcag tgaccatcgg gatgatctgc ttgacatttt catcctttac
480
acagttggta aaaatgacat tttttaggcc ttctccttct aagtgttgca taattttctg
540
ctgctctgta agatccgcca agtccatctt gttgaggacc agcaagtgag gcttaagccc
600
aagggtttcc tgaaacagag ggttgcggcc tgaaagtggg atccgggcat cgtggacctc
660
gatgatacag tccaccagct tcaggctgct ctgcatcttc ttcagcccct tggccatgtg
720

3770

gcccgggaac cagcgcgcca cgtcgcgacc gcacagggggg aagttctccc gccaggcggc
780
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840
gctcccgcag ctgaccttct cgctctgtcg cccaggctgg aacgcagtgg cacaatctca
900
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960
gctgggacta caggtgcccg ccaccacacc cacctaattt tcgtattttt agtagagacg
1020
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1068

<210> 4576
<211> 107
<212> PRT
<213> Homo sapiens

<400> 4576
Lys Trp Asp Pro Gly Ile Val Asp Leu Asp Asp Thr Val His Gln Leu
 1   5   10   15
Gln Ala Ala Leu His Leu Leu Gln Pro Leu Gly His Val Ala Arg Glu
            20   25   30
Pro Ala Arg His Val Ala Thr Ala Gln Gly Glu Val Leu Pro Pro Gly
        35   40   45
Gly Leu Gly Gly Ala Ala Gln Arg Ala Arg Gly Gln Ser His Gly Gly
    50   55   60
Thr Val Pro Gly Asn Ala Pro Ala Ala Asp Leu Leu Ala Leu Ser Pro
65   70   75   80
Arg Leu Glu Arg Ser Gly Thr Ile Ser Thr His Cys Lys Leu Arg Leu
            85   90   95
Pro Gly Ser Arg His Ser Pro Ala Ser Ala Ser
            100   105

<210> 4577
<211> 3525
<212> DNA
<213> Homo sapiens

<400> 4577
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ctaacgaaga agagactggc tatggaggga cacgatttca gaggtgcttc tgagctgctc
120
gtgctgacct cagccctgtc cttcctgcag accctgctga aggtcgtgta cgtggagaat
180
gacatccagc acctgcagga catgtcacac ttcccagacc gggggagcga gaatgggaca
240
cccatggacg tgaaagccgg ggtgcgggtc atgcaggtca gtcctgacgg ccagcatttg
300
gcttcaggcg accgaagtgg aaatctgagg caagtgggcc ctggcagtgt ccagtgtaca
360
cctcccagct ccagctcagg ttctcagggc agtgggcaga agccctggcc ttggcacctc
420

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ctgctgccca ttgggaatga ggggctgatc cacgagctgc acttcatgga cgagctggtc
480
aaggtggagg cccatgatgc tgaggtgctg tgcctggagt actccaagcc agagacgggg
540
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600
aactacaacc tggagcagac gctggatgac cactcctcct ccatcaccgc catcaagttc
660
gctggcaaca gagacatcca gatgatcagc tgtggggctg acaagagcat ctactttcgc
720
agtgcccagc agggttcgga tggactacac tttgtccgta cccaccacgt agcagagaaa
780
accaccttgt atgacatgga cattgacatc acccagaagt acgtggccgt ggcctgccag
840
gaccgcaatg tgagagtcta caacactgtg aacgggaagc agaagaagtg ctacaagggc
900
tcccagggtg acgaagggtc cttgctgaag gtccatgtgg acccctcagg caccttcctg
960
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1020
gccaagatgt ttggccattc aggtgggtgt gcctctctgc ttgggatgcc tccccacccg
1080
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1140
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1200
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1260
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1320
tcctggcagc ccctgcctgt ccaccagagg gatgagtccc tgccagggcc ccatggagtg
1380
atgctgggga cacaatcctc gttgcctgct aaccaacggc aagctgccac tgtgggcaaa
1440
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1500
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1560
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1800
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1920
gagaagttcc tccgccacca ctttgagaca ctgactgagt cccccctgcag agctctggga
1980
gacgtggagg cctctgaagc tgaagaccac ttcttcaacc cacgcctgag tatctccacg
2040
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2100
acccagtgcc ttgtgaagtc tccagaggtc aagctcatgg accgaggcgg aagccagccc
2160
agagcaggta ctggctacgc ctccccagac aggacccact cagtgccatc tgcttccgtt
2220
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2280
gacaggaatc tcccaacgcc cacatctgca cccaccccag gcctggctca gggtgtccat
2340
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2400
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2820
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2880
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2940
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3060
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3120
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3180
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3240
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3300
aagccctctt caagtggaag tggggaggga gggtagaagg tgatgcccag aggactcgtg
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tctgtcagtg gagagcatgg gaccagcgct cccaagaagt tcaggaactg cagccatgac
3420
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3480
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3525

<210> 4578
<211> 1007
<212> PRT
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<213> Homo sapiens

<400> 4578

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Val Lys Ala Gly Val Arg Val Met Gln Val Ser Pro Asp Gly Gln His
            20                  25                  30
Leu Ala Ser Gly Asp Arg Ser Gly Asn Leu Arg Gln Val Gly Pro Gly
            35                  40                  45
Ser Val Gln Cys Thr Pro Pro Ser Ser Ser Ser Gly Ser Gln Gly Ser
    50                  55                  60
Gly Gln Lys Pro Trp Pro Trp His Leu Leu Leu Pro Ile Gly Asn Glu
65                  70                  75                  80
Gly Leu Ile His Glu Leu His Phe Met Asp Glu Leu Val Lys Val Glu
            85                  90                  95
Ala His Asp Ala Glu Val Leu Cys Leu Glu Tyr Ser Lys Pro Glu Thr
            100                 105                 110
Gly Leu Thr Leu Leu Ala Ser Ala Ser Arg Asp Arg Leu Ile His Val
            115                 120                 125
Leu Asn Val Glu Lys Asn Tyr Asn Leu Glu Gln Thr Leu Asp Asp His
    130                 135                 140
Ser Ser Ser Ile Thr Ala Ile Lys Phe Ala Gly Asn Arg Asp Ile Gln
145                 150                 155                 160
Met Ile Ser Cys Gly Ala Asp Lys Ser Ile Tyr Phe Arg Ser Ala Gln
            165                 170                 175
Gln Gly Ser Asp Gly Leu His Phe Val Arg Thr His His Val Ala Glu
            180                 185                 190
Lys Thr Thr Leu Tyr Asp Met Asp Ile Asp Ile Thr Gln Lys Tyr Val
    195                 200                 205
Ala Val Ala Cys Gln Asp Arg Asn Val Arg Val Tyr Asn Thr Val Asn
    210                 215                 220
Gly Lys Gln Lys Lys Cys Tyr Lys Gly Ser Gln Gly Asp Glu Gly Ser
225                 230                 235                 240
Leu Leu Lys Val His Val Asp Pro Ser Gly Thr Phe Leu Ala Thr Ser
            245                 250                 255
Cys Ser Asp Lys Ser Ile Ser Val Ile Asp Phe Tyr Ser Gly Glu Cys
            260                 265                 270
Ile Ala Lys Met Phe Gly His Ser Gly Gly Cys Ala Ser Leu Leu Gly
            275                 280                 285
Met Pro Pro His Pro Pro Thr Pro Ser Asp Ser Glu Gly Lys Cys Ser
    290                 295                 300
Leu Ser Ala Leu Phe Ala Glu Ile Ile Thr Ser Met Lys Phe Thr Tyr
305                 310                 315                 320
Asp Cys His His Leu Ile Thr Val Ser Gly Asp Ser Cys Val Phe Ile
            325                 330                 335
Trp His Leu Gly Pro Glu Ile Thr Asn Cys Met Lys Gln His Leu Leu
            340                 345                 350
Glu Ile Asp His Arg Gln Gln Gln His Thr Asn Asp Lys Lys Arg
    355                 360                 365
Ser Gly His Pro Arg Ser Trp Gln Pro Leu Pro Val His Gln Arg Asp
    370                 375                 380
Glu Ser Leu Pro Gly Pro His Gly Val Met Leu Gly Thr Gln Ser Ser
385                 390                 395                 400
Leu Pro Ala Asn Gln Arg Gln Ala Ala Thr Val Gly Lys Ala Ala Gly
```

```
                  405                   410                   415
Asp Asp Asp Val Ala Asp Gly Leu Ala Phe His Ala Lys Arg Ser Tyr
            420                 425                 430
Gln Pro His Gly Arg Trp Ala Glu Arg Ala Gly Gln Glu Pro Leu Lys
            435                 440                 445
Thr Ile Leu Asp Ala Gln Asp Leu Asp Cys Tyr Phe Thr Pro Met Lys
            450                 455                 460
Pro Glu Ser Leu Glu Asn Ser Ile Leu Asp Ser Leu Glu Pro Gln Ser
465                 470                 475                 480
Leu Ala Ser Leu Leu Ser Glu Gln Lys Glu Ser Ser Glu Ala Ser Glu
            485                 490                 495
Leu Ile Leu Tyr Ser Leu Glu Ala Glu Val Thr Val Thr Gly Thr Asp
            500                 505                 510
Ser Gln Tyr Cys Arg Lys Glu Val Glu Ala Gly Pro Gly Asp Gln Gln
            515                 520                 525
Gly Asp Ser Tyr Leu Arg Val Ser Ser Asp Ser Pro Lys Asp Gln Ser
            530                 535                 540
Pro Pro Glu Gly Pro Thr Glu Asp Glu Leu Ser Leu Pro Glu Gly Pro
545                 550                 555                 560
Ser Val Pro Ser Ser Ser Leu Pro Gln Thr Pro Glu Gln Glu Lys Phe
            565                 570                 575
Leu Arg His His Phe Glu Thr Leu Thr Glu Ser Pro Cys Arg Ala Leu
            580                 585                 590
Gly Asp Val Glu Ala Ser Glu Ala Glu Asp His Phe Phe Asn Pro Arg
            595                 600                 605
Leu Ser Ile Ser Thr Gln Phe Leu Ser Ser Leu Gln Lys Ala Ser Arg
            610                 615                 620
Phe Thr His Thr Phe Pro Pro Arg Ala Thr Gln Cys Leu Val Lys Ser
625                 630                 635                 640
Pro Glu Val Lys Leu Met Asp Arg Gly Gly Ser Gln Pro Arg Ala Gly
            645                 650                 655
Thr Gly Tyr Ala Ser Pro Asp Arg Thr His Ser Val Pro Ser Ala Ser
            660                 665                 670
Val Thr Ala Pro Cys Leu Thr Ser Leu Ala Ser Cys Val Pro Ala Ser
            675                 680                 685
Ser Val Leu Pro Thr Asp Arg Asn Leu Pro Thr Pro Thr Ser Ala Pro
            690                 695                 700
Thr Pro Gly Leu Ala Gln Gly Val His Ala Pro Ser Thr Cys Ser Tyr
705                 710                 715                 720
Met Glu Ala Thr Ala Ser Ser Arg Ala Arg Ile Ser Arg Ser Ile Ser
            725                 730                 735
Leu Gly Asp Ser Glu Gly Pro Ile Val Ala Thr Leu Ala Gln Pro Leu
            740                 745                 750
Arg Arg Pro Ser Ser Val Gly Glu Leu Ala Ser Leu Gly Gln Glu Leu
            755                 760                 765
Gln Ala Ile Thr Thr Ala Thr Thr Pro Ser Leu Asp Ser Glu Gly Gln
            770                 775                 780
Glu Pro Ala Leu Arg Ser Trp Gly Asn His Glu Ala Arg Ala Asn Leu
785                 790                 795                 800
Arg Leu Thr Leu Ser Ser Ala Cys Asp Gly Leu Leu Gln Pro Pro Val
            805                 810                 815
Asp Thr Gln Pro Gly Val Thr Val Pro Ala Val Ser Phe Pro Ala Pro
            820                 825                 830
Ser Pro Val Glu Glu Ser Ala Leu Arg Leu His Gly Ser Ala Phe Arg
```

```
              835                    840                    845
Pro Ser Leu Pro Ala Pro Glu Ser Pro Gly Leu Pro Ala His Pro Ser
        850                    855                    860
Asn Pro Gln Leu Pro Glu Ala Arg Pro Gly Ile Pro Gly Gly Thr Ala
865                    870                    875                    880
Ser Leu Leu Glu Pro Thr Ser Gly Trp Gly Thr Ser Cys Thr Gly Cys
                885                    890                    895
Arg Pro Pro Ser Lys Lys Pro Ser Thr Phe Thr Val Cys Trp Ser Pro
            900                    905                    910
Val Ala Arg Trp Thr Pro Gly Ser Ser Arg His Gly Leu Ser Trp Ser
        915                    920                    925
Pro Pro Ser Cys Gly Ser Thr Ala Ser Trp Arg Leu Asn Ala Trp Trp
        930                    935                    940
Gly Leu Val Trp Pro Gln Pro Arg Leu Cys Pro Ala Gln Asp Pro Arg
945                    950                    955                    960
Pro His Arg Arg Cys Thr Pro Trp Pro Ala Gln Thr Cys Arg Pro Cys
                965                    970                    975
Trp Asn Thr Thr Arg Ser Cys Trp Cys Arg Pro Cys Gly Gly Arg His
            980                    985                    990
Gly Gly Thr Glu Gly Ala Ala Pro Pro Pro Gln Pro Cys Cys Phe
        995                    1000                   1005
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<210> 4579
<211> 321
<212> DNA
<213> Homo sapiens


<400> 4579
nncaagatgt ttggccattc agaaattatt accagcatga agttcaccta tgactgtcat
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cacttgatca cagtatctgg agacagctgc gtgttcatct ggcacctggg cccggagatc
120
accaactgca tgaagcagca cttgctggag attgaccacc ggcagcagca gcagcacaca
180
aatgacaaga agcggagtgg ccccccccagg caggatacgt atgtgtccac acctagtgag
240
attcactccc tgagccctgg agagcaaaca gaggatgatc tggaggaaga gtgtgagcca
300
gaagagatgc tgaagacacc n
321


<210> 4580
<211> 107
<212> PRT
<213> Homo sapiens


<400> 4580
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Xaa Lys Met Phe Gly His Ser Glu Ile Ile Thr Ser Met Lys Phe Thr
1                   5                   10                  15
Tyr Asp Cys His His Leu Ile Thr Val Ser Gly Asp Ser Cys Val Phe
                20                  25                  30
Ile Trp His Leu Gly Pro Glu Ile Thr Asn Cys Met Lys Gln His Leu
        35                  40                  45
Leu Glu Ile Asp His Arg Gln Gln Gln Gln His Thr Asn Asp Lys Lys
```

```
        50                  55                  60
Arg Ser Gly Pro Pro Arg Gln Asp Thr Tyr Val Ser Thr Pro Ser Glu
65                  70                  75                  80
Ile His Ser Leu Ser Pro Gly Glu Gln Thr Glu Asp Asp Leu Glu Glu
                85                  90                  95
Glu Cys Glu Pro Glu Glu Met Leu Lys Thr Pro
            100                 105
```

<210> 4581
<211> 1396
<212> DNA
<213> Homo sapiens

<400> 4581

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gggcggcgaa accgacggcg ccgggaggac gagggacggc gcagacggag gcggcggagc
120
cgggagcgca ggtcagattc agaggaagag cggtggcagc gctcagggat gcgaagccgg
180
agccccccgc ggcccaagtg gcactcaaga gatgggtcct ctcagtcgga ctcaggagag
240
gagcagtcac ggggccagtg ggctcgccgg cgacggcgcg cacgctcgtg gtctcctagc
300
tcctcagcat ccagctcggc gtctccaggg cgatcccaga gcccccgggc ggccgcggct
360
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660
aacaagagga tccaggagga caaccggctg gagctgcaga aggtgaagca gctgcggctg
720
gagcgggagc gggagaaggc catgcgcgag caggagctgg agatgctgca gcgcgtgaag
780
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840
aagctgcgtt ccaagatccg catccgggac gggcgggcca gcccatcga cctgctggcc
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gagctggagc agggcaagaa cgccgacttc tggcgggaca tgaccaccat caccgaggac
1080
gagatctcca agctccgcaa gctggaggcc tcgggcaagg ggccaggtga gcgccgcgag
1140
ggggtcaacg cctccgtcag ctctgatgtg cagtcggtgt tcaaggggaa gacatacaac
1200
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cagctgcagg tcatcttcca gggcatcgag ggcaaaatcc gcgctggtgg ccccaacctg
1260

gacatgggct actgggagag cctcctgcag cagcttcgtg cccacatggc gcgggcccgg
1320

ctgcgtgagc gccaccagga cgtgctgcgg cagaagctgt acaaactgaa gcaggagcag
1380

ggcgtggaga gctagc
1396

<210> 4582
<211> 354
<212> PRT
<213> Homo sapiens

<400> 4582
Arg Ser Gln Ser Pro Arg Ala Ala Ala Ala Leu Ser Gln Gln Gln
 1   5   10   15
Ser Leu Gln Glu Arg Leu Arg Leu Arg Glu Glu Arg Lys Gln Gln Glu
            20   25   30
Glu Leu Met Lys Ala Phe Glu Thr Pro Glu Glu Lys Arg Ala Arg Arg
        35   40   45
Leu Ala Lys Lys Glu Ala Lys Glu Arg Lys Lys Arg Glu Lys Met Gly
    50   55   60
Trp Gly Glu Glu Tyr Met Gly Tyr Thr Asn Thr Asp Asn Pro Phe Gly
65   70   75   80
Asp Asn Asn Leu Leu Gly Thr Phe Ile Trp Asn Lys Ala Leu Glu Lys
                85   90   95
Lys Gly Ile Ser His Leu Glu Glu Lys Glu Leu Lys Glu Arg Asn Lys
            100   105   110
Arg Ile Gln Glu Asp Asn Arg Leu Glu Leu Gln Lys Val Lys Gln Leu
        115   120   125
Arg Leu Glu Arg Glu Arg Glu Lys Ala Met Arg Glu Gln Glu Leu Glu
    130   135   140
Met Leu Gln Arg Val Lys Gly Thr Glu His Phe Lys Thr Trp Glu Glu
145   150   155   160
Gln Glu Asp Asn Phe His Leu Gln Gln Ala Lys Leu Arg Ser Lys Ile
                165   170   175
Arg Ile Arg Asp Gly Arg Ala Lys Pro Ile Asp Leu Leu Ala Lys Tyr
            180   185   190
Ile Ser Ala Glu Asp Asp Asp Leu Ala Gly Glu Met His Glu Pro Tyr
        195   200   205
Thr Phe Leu Asn Gly Leu Thr Val Ala Asp Met Glu Asp Leu Leu Glu
    210   215   220
Asp Ile Gln Val Tyr Met Glu Leu Glu Gln Gly Lys Asn Ala Asp Phe
225   230   235   240
Trp Arg Asp Met Thr Thr Ile Thr Glu Asp Glu Ile Ser Lys Leu Arg
                245   250   255
Lys Leu Glu Ala Ser Gly Lys Gly Pro Gly Glu Arg Arg Glu Gly Val
            260   265   270
Asn Ala Ser Val Ser Ser Asp Val Gln Ser Val Phe Lys Gly Lys Thr
        275   280   285
Tyr Asn Gln Leu Gln Val Ile Phe Gln Gly Ile Glu Gly Lys Ile Arg
    290   295   300
Ala Gly Gly Pro Asn Leu Asp Met Gly Tyr Trp Glu Ser Leu Leu Gln

```
305                    310                    315                    320
Gln Leu Arg Ala His Met Ala Arg Ala Arg Leu Arg Glu Arg His Gln
                   325                    330                    335
Asp Val Leu Arg Gln Lys Leu Tyr Lys Leu Lys Gln Glu Gln Gly Val
               340                    345                    350
Glu Ser


<210> 4583
<211> 3350
<212> DNA
<213> Homo sapiens

<400> 4583
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120
agatgacgcc agtcagggag cggccgtggc ccagacagtg aggaagcgcg aaggcggagc
180
aaccgaggaa tcctccggag aagaatcaga gccgtcgcta ccgccactac cgccaccacc
240
atggaaggag caaagccgac attgcagctc gtgtaccagg cagtgcaggc gctttaccac
300
gacccagatc ccagcggaaa ggagcgcgcc tcttttggc ttggggagct gcagcgttcg
360
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420
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540
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660
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720
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900
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1080
catatggccg tggcacgtga agatttagac aaagttctga attactgccg tatttttcact
1140
gaactatgtg aaacttttct tgaaaaaatt gtttgtactc caggccaagg tcttggggac
1200
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1320
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1620
gaagtcctag aaggagttgt ccgcctcccg gagaccgtac atacggctgt gcgatacacc
1680
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1980
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cataccaatc ccattgtgga aaatggacag actcatccgt gtcagaaagt catacaggaa
2160
atatggccag ttttatccga gactctaaat aagcaccgag ctgataatcg gattgtagag
2220
cgttgttgca ggtgcctgcg ctttgctgtt cgctgtgtag gcaaaggatc tgcagcactg
2280
ctgcagccac tagtcacaca gatggtgaat gtgtaccacg tacatcagca ttcctgcttc
2340
ctgtaccttg gcagtatcct tgtggatgaa tatggcatgg aagaaggctg tcggcaggga
2400
ctgctagaca tgctccaggc actgtgcatc cccacctttc agctcctaga acagcagaat
2460
ggtctccaga tcaccctga cactgtagat gacctgttcc ggctagccac caggtttatt
2520
cagcgtagcc ctgtcacctt gctgcggagc caagtggtca tccctatctt acagtgggcc
2580
attgcctcta ctaccctgga ccaccgggat gccaattgta gtgtcatgag gtttctacga
2640
gacctcattc atacaggggt agccaatgat catgaagaag actttgaatt acggaaagaa
2700
ctgattggac aggtgatgaa ccagcttgga cagcagcttg tcagccagct gctgcacacc
2760
tgctgctttt gcctcccccc ctatacccta ccagatgtgg ctgaagtgct ctgggagatc
2820

3780

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atgcaggttg acagaccgac tttttgtcga tggttagaaa attccttaaa aggtttgcca
2880
aaggaaacaa ccgtgggagc cgtcacagtg acacacaaac aacttacaga cttccacaag
2940
caagtcacta gtgctgagga atgtaaacaa gtttgctggg ccttgcgaga cttcaccagg
3000
ttgtttcgat agctcacact cctgcactgt gcctgtcacc caggaatgtc ttttttaatt
3060
agaagacagg aagaaaacaa aaaccagact gtgtcccaca atcagaaacc tccgttgtgg
3120
cagaggggcc ttcaccgcca ccagggtgtc ccgccagaca gggagagact ccagccttct
3180
gaggccatcc tgaggagttc ctgtttgggg gtgtgaggga aaatcagcgc ggattttaaa
3240
aagatggctg tggcctgccc ggcgtggtgg gaggggagct ggtttcctgg tgaactttct
3300
aaaaggaaaa ataattttaa gtaaagaaaa aaggaaaaaa aggaagacta
3350


<210> 4584
<211> 923
<212> PRT
<213> Homo sapiens

<400> 4584
Met Glu Gly Ala Lys Pro Thr Leu Gln Leu Val Tyr Gln Ala Val Gln
1               5                  10                 15
Ala Leu Tyr His Asp Pro Asp Pro Ser Gly Lys Glu Arg Ala Ser Phe
            20                 25                 30
Trp Leu Gly Glu Leu Gln Arg Ser Val His Ala Trp Glu Ile Ser Asp
        35                 40                 45
Gln Leu Leu Gln Ile Arg Gln Asp Val Glu Ser Cys Tyr Phe Ala Ala
    50                 55                 60
Gln Thr Met Lys Met Lys Ile Gln Thr Ser Phe Tyr Glu Leu Pro Thr
65                 70                 75                 80
Asp Ser His Ala Ser Leu Arg Asp Ser Leu Leu Thr His Ile Gln Asn
            85                 90                 95
Leu Lys Asp Leu Ser Pro Val Ile Val Thr Gln Leu Ala Leu Ala Ile
            100                105                110
Ala Asp Leu Ala Leu Gln Met Pro Ser Trp Lys Gly Cys Val Gln Thr
            115                120                125
Leu Val Glu Lys Tyr Ser Asn Asp Val Thr Ser Leu Pro Phe Leu Leu
            130                135                140
Glu Ile Leu Thr Val Leu Pro Glu Glu Val His Ser Arg Ser Leu Arg
145                150                155                160
Ile Gly Ala Asn Arg Arg Thr Glu Ile Ile Glu Asp Leu Ala Phe Tyr
                165                170                175
Ser Ser Thr Val Val Ser Leu Leu Met Thr Cys Val Glu Lys Ala Gly
            180                185                190
Thr Asp Glu Lys Met Leu Met Lys Val Phe Arg Cys Leu Gly Ser Trp
            195                200                205
Phe Asn Leu Gly Val Leu Asp Ser Asn Phe Met Ala Asn Asn Lys Leu
    210                215                220
Leu Ala Leu Leu Phe Glu Val Leu Gln Gln Asp Lys Thr Ser Ser Asn
```

```
        225                 230                 235                 240
Leu His Glu Ala Ala Ser Asp Cys Val Cys Ser Ala Leu Tyr Ala Ile
                245                 250                 255
Glu Asn Val Glu Thr Asn Leu Pro Leu Ala Met Gln Leu Phe Gln Gly
            260                 265                 270
Val Leu Thr Leu Glu Thr Ala Tyr His Met Ala Val Ala Arg Glu Asp
        275                 280                 285
Leu Asp Lys Val Leu Asn Tyr Cys Arg Ile Phe Thr Glu Leu Cys Glu
        290                 295                 300
Thr Phe Leu Glu Lys Ile Val Cys Thr Pro Gly Gln Gly Leu Gly Asp
305                 310                 315                 320
Leu Arg Thr Leu Glu Leu Leu Ile Cys Ala Gly His Pro Gln Tyr
                325                 330                 335
Glu Val Val Glu Ile Ser Phe Asn Phe Trp Tyr Arg Leu Gly Glu His
            340                 345                 350
Leu Tyr Lys Thr Asn Asp Glu Val Ile His Gly Ile Phe Lys Ala Tyr
        355                 360                 365
Ile Gln Arg Leu Leu His Ala Leu Ala Arg His Cys Gln Leu Glu Pro
    370                 375                 380
Asp His Glu Gly Val Pro Glu Glu Thr Asp Asp Phe Gly Glu Phe Arg
385                 390                 395                 400
Met Arg Val Ser Asp Leu Val Lys Asp Leu Ile Phe Leu Ile Gly Ser
            405                 410                 415
Met Glu Cys Phe Ala Gln Leu Tyr Ser Thr Leu Lys Glu Gly Asn Pro
        420                 425                 430
Pro Trp Glu Val Thr Glu Ala Val Leu Phe Ile Met Ala Ala Ile Ala
        435                 440                 445
Lys Ser Val Asp Pro Glu Asn Asn Pro Thr Leu Val Glu Val Leu Glu
    450                 455                 460
Gly Val Val Arg Leu Pro Glu Thr Val His Thr Ala Val Arg Tyr Thr
465                 470                 475                 480
Ser Ile Glu Leu Val Gly Glu Met Ser Glu Val Val Asp Arg Asn Pro
            485                 490                 495
Gln Phe Leu Asp Pro Val Leu Gly Tyr Leu Met Lys Gly Leu Cys Glu
        500                 505                 510
Lys Pro Leu Ala Ser Ala Ala Ala Lys Ala Ile His Asn Ile Cys Ser
        515                 520                 525
Val Cys Arg Asp His Met Ala Gln His Phe Asn Gly Leu Leu Glu Ile
        530                 535                 540
Ala Arg Ser Leu Asp Ser Phe Leu Leu Ser Pro Glu Ala Ala Val Gly
545                 550                 555                 560
Leu Leu Lys Gly Thr Ala Leu Val Leu Ala Arg Leu Pro Leu Asp Lys
            565                 570                 575
Ile Thr Glu Cys Leu Ser Glu Leu Cys Ser Val Gln Val Met Ala Leu
        580                 585                 590
Lys Lys Leu Leu Ser Gln Glu Pro Ser Asn Gly Ile Ser Ser Asp Pro
    595                 600                 605
Thr Val Phe Leu Asp Arg Leu Ala Val Ile Phe Arg His Thr Asn Pro
    610                 615                 620
Ile Val Glu Asn Gly Gln Thr His Pro Cys Gln Lys Val Ile Gln Glu
625                 630                 635                 640
Ile Trp Pro Val Leu Ser Glu Thr Leu Asn Lys His Arg Ala Asp Asn
            645                 650                 655
Arg Ile Val Glu Arg Cys Cys Arg Cys Leu Arg Phe Ala Val Arg Cys
```

3782

```
                   660                    665                    670
Val Gly Lys Gly Ser Ala Ala Leu Leu Gln Pro Leu Val Thr Gln Met
               675                    680                    685
Val Asn Val Tyr His Val His Gln His Ser Cys Phe Leu Tyr Leu Gly
           690                    695                    700
Ser Ile Leu Val Asp Glu Tyr Gly Met Glu Glu Gly Cys Arg Gln Gly
705                    710                    715                    720
Leu Leu Asp Met Leu Gln Ala Leu Cys Ile Pro Thr Phe Gln Leu Leu
                   725                    730                    735
Glu Gln Gln Asn Gly Leu Gln Asn His Pro Asp Thr Val Asp Asp Leu
               740                    745                    750
Phe Arg Leu Ala Thr Arg Phe Ile Gln Arg Ser Pro Val Thr Leu Leu
               755                    760                    765
Arg Ser Gln Val Val Ile Pro Ile Leu Gln Trp Ala Ile Ala Ser Thr
           770                    775                    780
Thr Leu Asp His Arg Asp Ala Asn Cys Ser Val Met Arg Phe Leu Arg
785                    790                    795                    800
Asp Leu Ile His Thr Gly Val Ala Asn Asp His Glu Glu Asp Phe Glu
               805                    810                    815
Leu Arg Lys Glu Leu Ile Gly Gln Val Met Asn Gln Leu Gly Gln Gln
           820                    825                    830
Leu Val Ser Gln Leu Leu His Thr Cys Cys Phe Cys Leu Pro Pro Tyr
           835                    840                    845
Thr Leu Pro Asp Val Ala Glu Val Leu Trp Glu Ile Met Gln Val Asp
       850                    855                    860
Arg Pro Thr Phe Cys Arg Trp Leu Glu Asn Ser Leu Lys Gly Leu Pro
865                    870                    875                    880
Lys Glu Thr Thr Val Gly Ala Val Thr Val Thr His Lys Gln Leu Thr
               885                    890                    895
Asp Phe His Lys Gln Val Thr Ser Ala Glu Glu Cys Lys Gln Val Cys
           900                    905                    910
Trp Ala Leu Arg Asp Phe Thr Arg Leu Phe Arg
           915                    920
```

<210> 4585
<211> 1952
<212> DNA
<213> Homo sapiens

<400> 4585
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cccgggtggt ctccattgtc gggctgctgc tctcagcggc ggggctcgcc agcgcttcag
60
tgggcgggga cgcggcaggt gactccagac caaggaggat gagctgctgt ccctggaaga
120
gaacggatgg agggaagcag ctcctacgaa gttccctctg tggctgctgc tgatctggag
180
gagggtgctg gtcagactag gagcttgcct gccacccect ccaaagatgt tcacaagggt
240
gttggaggca tcatcttttc ctcctcaccg attttagact tgagtgaaag tggtctgtgc
300
cgtttggagg aggtctttag aatccccagc cttcaacaat tgcatctgca aaggaatgcc
360
ctgtgtgtga ttcctcaaga tttctttcag ttgcttccga acctgacttg gctggacctc
420
```

```
cggtacaata gaattaaagc gcttccttct gggattggag ctcaccagca tttgaaaact
480
ttgcttttag aaagaaatcc tatcaaaatg ttacctgtgg agctggggag cgtaaccacg
540
ctgaaagcac tgaacctaag acactgccct ctggaattcc ctcctcagct cgttgtgcag
600
aagggattgg tggctatcca gcgcttcctg cggatgtggg cagtagaaca ctctctcccc
660
agaaatccaa cttctcaaga ggctccaccg gttagagaga tgaccctccg tgacctcccg
720
agcccaggac tggagttgtc tggagaccac gcgtctaacc aaggagctgt gaacgctcag
780
gacccagagg gggctgtgat gaaagagaag gccagctttc tcccgcctgt ggaaaagcca
840
gacctgagtg aactcaggaa gtctgcggac tcctcagaga actggcccag cgaggaggag
900
atcaggcgct tttggaagct gaggcaggag attgttgagc acgtgaaggc agacgttctg
960
ggagatcagc tcttgacgag ggaattacct ccaaatctca aggcggcctt gaacattgag
1020
aaagaactac caaagccaag acacgttttc agaaggaaga cagcctcctc caggagcatc
1080
ttacccgacc tcttgtcacc gtaccaaatg gcgatccgag caaaaagact ggaagagagc
1140
cgagcggcgg cgctccgaga gctccaggag aagcaggctc tgatggagca gcagagacga
1200
gagaaaaggg cactgcagga gtggagagag cgagcccaga ggatgaggaa gaggaaggaa
1260
gagctcagca aactcctgcc tccgcggagg agcatggtgg catcaaagat tccctctgcc
1320
acagatctga tagataacag gaaagtacca ctgaatccgc ctggaaaaat gaaaccaagc
1380
aaagagaaat cgccacaagc aagtaaagaa atgagtgccc tgcaggagag aaatttagaa
1440
gagaagataa aacagcacgt cctccaaatg cgtgagcaaa gaagattcca tggccaggcc
1500
ccactggagg agatgaggaa ggctgccgag gatctggaaa ttgccacaga gctacaggat
1560
gaagtattga agctaaaatt gggattaacc ttgaacaaag atcgtcgacg ggcggccctc
1620
actggaaacc tttcgcttgg cctgccggca gcacagcctc aaaatacatt ttttaacaca
1680
aaatatggag aatcaggaaa tgttcgcaga taccagtgac accaggtggc tggactgatg
1740
gagacgtctt cagacaggag ccgctcagtc ttctttcccg gcgtcgcctc ctgtgtggtg
1800
ccggaagagc gccaggttca gtgttaccct gagggctgat ttcgcgcagc ctgttgtttt
1860
ccttagacag gtccacgtcc ctctcctgag gctgtggaag atttcagccg tattaaaaga
1920
aaggacactg tgaaaaaaaa aaaaaaaaaa aa
1952
```

<210> 4586

<211> 530
<212> PRT
<213> Homo sapiens

<400> 4586
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Met Glu Gly Ser Ser Ser Tyr Glu Val Pro Ser Val Ala Ala Ala Asp
 1               5                  10                  15
Leu Glu Glu Gly Ala Gly Gln Thr Arg Ser Leu Pro Ala Thr Pro Ser
            20                  25                  30
Lys Asp Val His Lys Gly Val Gly Gly Ile Ile Phe Ser Ser Ser Pro
         35                  40                  45
Ile Leu Asp Leu Ser Glu Ser Gly Leu Cys Arg Leu Glu Glu Val Phe
        50                  55                  60
Arg Ile Pro Ser Leu Gln Gln Leu His Leu Gln Arg Asn Ala Leu Cys
65                  70                  75                  80
Val Ile Pro Gln Asp Phe Phe Gln Leu Leu Pro Asn Leu Thr Trp Leu
                85                  90                  95
Asp Leu Arg Tyr Asn Arg Ile Lys Ala Leu Pro Ser Gly Ile Gly Ala
            100                 105                 110
His Gln His Leu Lys Thr Leu Leu Leu Glu Arg Asn Pro Ile Lys Met
        115                 120                 125
Leu Pro Val Glu Leu Gly Ser Val Thr Thr Leu Lys Ala Leu Asn Leu
    130                 135                 140
Arg His Cys Pro Leu Glu Phe Pro Pro Gln Leu Val Val Gln Lys Gly
145                 150                 155                 160
Leu Val Ala Ile Gln Arg Phe Leu Arg Met Trp Ala Val Glu His Ser
                165                 170                 175
Leu Pro Arg Asn Pro Thr Ser Gln Glu Ala Pro Pro Val Arg Glu Met
            180                 185                 190
Thr Leu Arg Asp Leu Pro Ser Pro Gly Leu Glu Leu Ser Gly Asp His
        195                 200                 205
Ala Ser Asn Gln Gly Ala Val Asn Ala Gln Asp Pro Glu Gly Ala Val
    210                 215                 220
Met Lys Glu Lys Ala Ser Phe Leu Pro Pro Val Glu Lys Pro Asp Leu
 225                230                 235                 240
Ser Glu Leu Arg Lys Ser Ala Asp Ser Ser Glu Asn Trp Pro Ser Glu
            245                 250                 255
Glu Glu Ile Arg Arg Phe Trp Lys Leu Arg Gln Glu Ile Val Glu His
            260                 265                 270
Val Lys Ala Asp Val Leu Gly Asp Gln Leu Leu Thr Arg Glu Leu Pro
        275                 280                 285
Pro Asn Leu Lys Ala Ala Leu Asn Ile Glu Lys Glu Leu Pro Lys Pro
    290                 295                 300
Arg His Val Phe Arg Arg Lys Thr Ala Ser Ser Arg Ser Ile Leu Pro
305                 310                 315                 320
Asp Leu Leu Ser Pro Tyr Gln Met Ala Ile Arg Ala Lys Arg Leu Glu
            325                 330                 335
Glu Ser Arg Ala Ala Ala Leu Arg Glu Leu Gln Glu Lys Gln Ala Leu
            340                 345                 350
Met Glu Gln Gln Arg Arg Glu Lys Arg Ala Leu Gln Glu Trp Arg Glu
        355                 360                 365
Arg Ala Gln Arg Met Arg Lys Arg Lys Glu Glu Leu Ser Lys Leu Leu
    370                 375                 380
Pro Pro Arg Arg Ser Met Val Ala Ser Lys Ile Pro Ser Ala Thr Asp
```

```
385                390                395                400
Leu Ile Asp Asn Arg Lys Val Pro Leu Asn Pro Pro Gly Lys Met Lys
                405                    410                415
Pro Ser Lys Glu Lys Ser Pro Gln Ala Ser Lys Glu Met Ser Ala Leu
            420                425                430
Gln Glu Arg Asn Leu Glu Glu Lys Ile Lys Gln His Val Leu Gln Met
        435                440                445
Arg Glu Gln Arg Arg Phe His Gly Gln Ala Pro Leu Glu Glu Met Arg
    450                455                460
Lys Ala Ala Glu Asp Leu Glu Ile Ala Thr Glu Leu Gln Asp Glu Val
465                470                475                480
Leu Lys Leu Lys Leu Gly Leu Thr Leu Asn Lys Asp Arg Arg Arg Ala
            485                490                495
Ala Leu Thr Gly Asn Leu Ser Leu Gly Leu Pro Ala Ala Gln Pro Gln
        500                505                510
Asn Thr Phe Phe Asn Thr Lys Tyr Gly Glu Ser Gly Asn Val Arg Arg
        515                520                525
Tyr Gln
    530
```

<210> 4587
<211> 1723
<212> DNA
<213> Homo sapiens

<400> 4587

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nnaaattttg tcaagaagcg gaggctctta gaacggagag gctttctgag taaaaagaac
60
caaccccccta gcaaggcgcc taagttgcac tctgaacctt caaagaaagg ggaaactcct
120
acggtcgatg gcacttggaa gaccccttcc ttcccaaaaa agaagacagc tgcttccagc
180
aatgggtcag gacagcccct ggacaagaaa gctgcagtgt cttggttgac ccctgcccct
240
tcaaaaaagg ctgattctgt tgctgctaaa gtagatttgc tgggggagtt ccagagtgcc
300
cttccaaaga tcaatagcca cccaacccgc tctcagaaga agagctccca gaagaaatcc
360
tctaaaaaga accatcctca gaagaatgcc ccacagaact ccacccaagc tcattcagag
420
aataaatgct ccggagcatc ccagaagttg ccacggaaga tggtggcaat tgactgtgag
480
atggtgggca caggaccaaa ggggcatgtt agttccttgg ctcgatgtag cattgtcaac
540
tacaacggag atgtgcttta tgacgagtac attcttcccc cctgccacat tgtggactac
600
cgaaccaggt ggagtggtat ccggaagcag cacatggtga atgccacacc cttcaagatt
660
gctcgaggcc agatcttgaa gatactcaca gggaagatag tggtggggca tgccatccac
720
aacgacttca aagcccttca gtactttcac cccaagtccc tcacccgtga cacctcccat
780
atcccccccc tcaaccggaa ggctgactgc ccggagaatg ccaccatgtc tctgaagcat
840
```

ctcaccaaga agctgctaaa ccgggatatc caggttggga agagcggaca ttcctctgtg
900
gaagatgccc aggccaccat ggagctatat aagttggttg aagtcgagtg ggaagagcac
960
ctagcccgga atcccctac agactagtgg cagtggggac gctggtgata tgaggaggca
1020
gaggcagcac ccaggagaaa cagggcagtg gaccaatgga cagctccacc agctccacat
1080
ctttggaagc tagatttggg gagagagaag ctctacccca gacttaatac ccattgaaat
1140
ttcacctcag gtgttgtgtc ctgtgtctgg ttaagtgtcc catggaaggg gaaagccttc
1200
acgtcagaac ccaaccctat accttttact tcttaaatgg tgctaaccac aggtgtccca
1260
gggtgctctg tgccagttaa gattttaac tttcaagggg cagggcatac tgggaaatgt
1320
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1380
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1440
gtcgtcacgc ctgtagtccc aacacttagg gagtccgagg cgggcggatc acctgagatc
1500
aggagttcaa gaccagcctg gccaacatgg cgaattcccg ttctctacta aaaatacaaa
1560
aaatgtgtgg ggtgtggtgg caggagcctg taatcctagc tactcaggag gctgaggcag
1620
gagaatcgct tgagcccagg aggcggagat tgcagtgagc cgagatcgtg tcactgcact
1680
ccagcctggg tgacaagagt gagactccgt ctccaaaaaa aaa
1723

<210> 4588
<211> 328
<212> PRT
<213> Homo sapiens

<400> 4588
Xaa Asn Phe Val Lys Lys Arg Arg Leu Leu Glu Arg Arg Gly Phe Leu
 1   5   10   15
Ser Lys Lys Asn Gln Pro Pro Ser Lys Ala Pro Lys Leu His Ser Glu
             20   25   30
Pro Ser Lys Lys Gly Glu Thr Pro Thr Val Asp Gly Thr Trp Lys Thr
         35   40   45
Pro Ser Phe Pro Lys Lys Lys Thr Ala Ala Ser Ser Asn Gly Ser Gly
     50   55   60
Gln Pro Leu Asp Lys Lys Ala Ala Val Ser Trp Leu Thr Pro Ala Pro
65   70   75   80
Ser Lys Lys Ala Asp Ser Val Ala Ala Lys Val Asp Leu Leu Gly Glu
                 85   90   95
Phe Gln Ser Ala Leu Pro Lys Ile Asn Ser His Pro Thr Arg Ser Gln
             100   105   110
Lys Lys Ser Ser Gln Lys Lys Ser Ser Lys Lys Asn His Pro Gln Lys
         115   120   125
Asn Ala Pro Gln Asn Ser Thr Gln Ala His Ser Glu Asn Lys Cys Ser

```
        130                    135                    140
Gly Ala Ser Gln Lys Leu Pro Arg Lys Met Val Ala Ile Asp Cys Glu
145                    150                    155                    160
Met Val Gly Thr Gly Pro Lys Gly His Val Ser Ser Leu Ala Arg Cys
                165                    170                    175
Ser Ile Val Asn Tyr Asn Gly Asp Val Leu Tyr Asp Glu Tyr Ile Leu
                180                    185                    190
Pro Pro Cys His Ile Val Asp Tyr Arg Thr Arg Trp Ser Gly Ile Arg
            195                    200                    205
Lys Gln His Met Val Asn Ala Thr Pro Phe Lys Ile Ala Arg Gly Gln
    210                    215                    220
Ile Leu Lys Ile Leu Thr Gly Lys Ile Val Val Gly His Ala Ile His
225                    230                    235                    240
Asn Asp Phe Lys Ala Leu Gln Tyr Phe His Pro Lys Ser Leu Thr Arg
                245                    250                    255
Asp Thr Ser His Ile Pro Pro Leu Asn Arg Lys Ala Asp Cys Pro Glu
            260                    265                    270
Asn Ala Thr Met Ser Leu Lys His Leu Thr Lys Lys Leu Leu Asn Arg
            275                    280                    285
Asp Ile Gln Val Gly Lys Ser Gly His Ser Ser Val Glu Asp Ala Gln
    290                    295                    300
Ala Thr Met Glu Leu Tyr Lys Leu Val Glu Val Glu Trp Glu Glu His
305                    310                    315                    320
Leu Ala Arg Asn Pro Pro Thr Asp
                325
```

<210> 4589
<211> 585
<212> DNA
<213> Homo sapiens

<400> 4589
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acgcgtgaag ggggcttggg agcctcgggg cgcgagctgt gttggaagca aagtcctcct
60
tgtgggttgg ggtggctgag ggagaaggga agcgagggtc gcggcgggac cagacgcccc
120
agtcccggcc cgcccgcgac tactgaaggc gctgccgcct gacctgaacg ggcacttgtg
180
ttccagctcc cctgggacct gtggccgccg cccacagacc atgctcctgg ggcgcctgac
240
ttcccagctg ttgagggccg ttccttgggc aggtaggaag ccccgcggcg ganctgggag
300
gatgcacacc tggttaggag tgcgggtctc agcagctccg ctggggcagg cggtggcca
360
cacacacact cttcccctc taagcttccg atgctcacag agggaacctc aggggttcag
420
gccaggaatg aggtgcgggg gatcctcgct gggacgaacc tgctgctccc caacccgacg
480
ggcctgtgtg gtctcgcgag cggtgaccgt ggcgtctggt tttctgcagg cggccgcccg
540
ccttggcccg tctctggagt gctgggcagc cgggtctgcg ggccc
585
```

<210> 4590

<211> 121
<212> PRT
<213> Homo sapiens

<400> 4590
Met Leu Leu Gly Arg Leu Thr Ser Gln Leu Leu Arg Ala Val Pro Trp
 1   5   10   15
Ala Gly Arg Lys Pro Arg Gly Gly Xaa Gly Arg Met His Thr Trp Leu
            20   25   30
Gly Val Arg Val Ser Ala Ala Pro Leu Gly Gln Gly Gly Gly His Thr
        35   40   45
His Thr Leu Ser Pro Leu Ser Phe Arg Cys Ser Gln Arg Glu Pro Gln
    50   55   60
Gly Phe Arg Pro Gly Met Arg Cys Gly Gly Ser Ser Leu Gly Arg Thr
65   70   75   80
Cys Cys Ser Pro Thr Arg Arg Ala Cys Val Val Ser Arg Ala Val Thr
                85   90   95
Val Ala Ser Gly Phe Leu Gln Ala Ala Ala Arg Leu Gly Pro Ser Leu
            100   105   110
Glu Cys Trp Ala Ala Gly Ser Ala Gly
            115   120

<210> 4591
<211> 496
<212> DNA
<213> Homo sapiens

<400> 4591
aaatttggcc caccgcctac ttttgtagac gacgttttat gggaacacag acacccccgt
60
ccgtgtactt ccatggcttc tttcacaggt cagctgcaga gctaagtaac tgtgacaggg
120
accacttggc taagaaagcc tccagtattt actcgactgc cctgtgcttt ggactcaaaa
180
gagctcctct ctggccctct ggccacgatc gtctccatga gacacggaag ctacgatgct
240
tggcagacag gcttgtgagc ccacaccctg cctccagccc aggctccagg tacctgcccc
300
agaattccct gcacaagtgg ccccaagctt gtgctggtct gtgggggttt cttccctggg
360
ctgttgtcct gggcatgtgc agtcctcagg ctgatgggca gctatgggaa ggctggtcat
420
gcaggctggg tatccacaca cctgcacacg tggcttctcc tagtgcagta tggagtcagg
480
gatgggccgg gaaggg
496

<210> 4592
<211> 152
<212> PRT
<213> Homo sapiens

<400> 4592
Met Gly Thr Gln Thr Pro Pro Ser Val Tyr Phe His Gly Phe Phe His

```
     1               5                    10                   15
    Arg Ser Ala Ala Glu Leu Ser Asn Cys Asp Arg Asp His Leu Ala Lys
                20                    25                   30
    Lys Ala Ser Ser Ile Tyr Ser Thr Ala Leu Cys Phe Gly Leu Lys Arg
                35                    40                   45
    Ala Pro Leu Trp Pro Ser Gly His Asp Arg Leu His Glu Thr Arg Lys
         50                    55                   60
    Leu Arg Cys Leu Ala Asp Arg Leu Val Ser Pro His Pro Ala Ser Ser
    65                    70                    75                   80
    Pro Gly Ser Arg Tyr Leu Pro Gln Asn Ser Leu His Lys Trp Pro Gln
                     85                    90                   95
    Ala Cys Ala Gly Leu Trp Gly Phe Leu Pro Trp Ala Val Val Leu Gly
                    100                   105                  110
    Met Cys Ser Pro Gln Ala Asp Gly Gln Leu Trp Glu Gly Trp Ser Cys
                    115                   120                  125
    Arg Leu Gly Ile His Thr Pro Ala His Val Ala Ser Pro Ser Ala Val
                    130                   135                  140
    Trp Ser Gln Gly Trp Ala Gly Lys
    145                   150
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<210> 4593
<211> 4783
<212> DNA
<213> Homo sapiens

<400> 4593
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2460
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3792

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<210> 4594
<211> 1145
<212> PRT
<213> Homo sapiens

<400> 4594
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Phe Ser Ser Phe Ala Ser Gln Ala Ser Gly Ser Ser Ser Ser Ala Thr
        35                  40                  45
Thr Val Thr Ser Lys Val Ala Pro Ser Trp Pro Glu Ser His Ser Ser
    50                  55                  60
Ala Asp Ser Ala Ser Leu Ala Lys Lys Lys Pro Leu Phe Ile Thr Thr
65                  70                  75                  80
Asp Ser Ser Lys Leu Val Ser Gly Val Leu Gly Ser Ala Leu Thr Ser
                85                  90                  95
Gly Gly Pro Ser Leu Ser Ala Met Gly Asn Gly Arg Ser Ser Ser Pro
            100                 105                 110
Thr Ser Ser Leu Thr Gln Pro Ile Glu Met Pro Thr Leu Ser Ser Ser
        115                 120                 125
Pro Thr Glu Glu Arg Pro Thr Val Gly Pro Gly Gln Gln Asp Asn Pro
    130                 135                 140
Leu Leu Lys Thr Phe Ser Asn Val Phe Gly Arg His Ser Gly Gly Phe
145                 150                 155                 160
Leu Ser Ser Pro Ala Asp Phe Ser Gln Glu Asn Lys Ala Pro Phe Glu
                165                 170                 175
Ala Val Lys Arg Phe Ser Leu Asp Glu Arg Ser Leu Ala Cys Arg Gln
```

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                    180                      185                      190
Asp Ser Asp Ser Ser Thr Asn Ser Asp Leu Ser Asp Leu Ser Asp Ser
         195                      200                      205
Glu Glu Gln Leu Gln Ala Lys Thr Gly Leu Lys Gly Ile Pro Glu His
     210                      215                      220
Leu Met Gly Lys Leu Gly Pro Asn Gly Glu Arg Ser Ala Glu Leu Leu
225                      230                      235                      240
Leu Gly Lys Ser Lys Gly Lys Gln Ala Pro Lys Gly Arg Pro Arg Thr
                    245                      250                      255
Ala Pro Leu Lys Val Gly Gln Ser Val Leu Lys Asp Val Ser Lys Val
                    260                      265                      270
Lys Lys Leu Lys Gln Ser Gly Glu Pro Phe Leu Gln Asp Gly Ser Cys
         275                      280                      285
Ile Asn Val Ala Pro His Leu His Lys Cys Arg Glu Cys Arg Leu Glu
         290                      295                      300
Arg Tyr Arg Lys Phe Lys Glu Gln Glu Gln Asp Asp Ser Thr Val Ala
305                      310                      315                      320
Cys Arg Phe Phe His Phe Arg Arg Leu Ile Phe Thr Arg Lys Gly Val
                    325                      330                      335
Leu Arg Val Glu Gly Phe Leu Ser Pro Gln Gln Ser Asp Pro Asp Ala
         340                      345                      350
Met Asn Leu Trp Ile Pro Ser Ser Ser Leu Ala Glu Gly Ile Asp Leu
         355                      360                      365
Glu Thr Ser Lys Tyr Ile Leu Ala Asn Val Gly Asp Gln Phe Cys Gln
     370                      375                      380
Leu Val Met Ser Glu Lys Glu Ala Met Met Met Val Glu Pro His Gln
385                      390                      395                      400
Lys Val Ala Trp Lys Arg Ala Val Arg Gly Val Arg Glu Met Cys Asp
                    405                      410                      415
Val Cys Glu Thr Thr Leu Phe Asn Ile His Trp Val Cys Arg Lys Cys
                    420                      425                      430
Gly Phe Gly Val Cys Leu Asp Cys Tyr Arg Leu Arg Lys Ser Arg Pro
         435                      440                      445
Arg Ser Glu Thr Glu Glu Met Gly Asp Glu Glu Val Phe Ser Trp Leu
     450                      455                      460
Lys Cys Ala Lys Gly Gln Ser His Glu Pro Glu Asn Leu Met Pro Thr
465                      470                      475                      480
Gln Ile Ile Pro Gly Thr Ala Leu Tyr Asn Ile Gly Asp Met Val His
                    485                      490                      495
Ala Ala Arg Gly Lys Trp Gly Ile Lys Ala Asn Cys Pro Cys Ile Ser
         500                      505                      510
Arg Gln Asn Lys Ser Val Leu Arg Pro Ala Val Thr Asn Gly Met Ser
         515                      520                      525
Gln Leu Pro Ser Ile Asn Pro Ser Ala Ser Ser Gly Asn Glu Thr Thr
     530                      535                      540
Phe Ser Gly Gly Gly Gly Pro Ala Pro Val Thr Thr Pro Glu Pro Asp
545                      550                      555                      560
His Val Pro Lys Ala Asp Ser Thr Asp Ile Arg Ser Glu Glu Pro Leu
                    565                      570                      575
Lys Thr Asp Ser Ser Ala Ser Asn Ser Asn Ser Glu Leu Lys Ala Ile
         580                      585                      590
Arg Pro Pro Cys Pro Asp Thr Ala Pro Pro Ser Ser Ala Leu His Trp
         595                      600                      605
Leu Ala Asp Leu Ala Thr Gln Lys Ala Lys Glu Glu Thr Lys Glu Ala
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          610                    615                    620
Gly Ser Leu Arg Ser Val Leu Asn Lys Glu Ser His Ser Pro Phe Gly
625                     630                    635                    640
Leu Asp Ser Phe Asn Ser Thr Ala Lys Val Ser Pro Leu Thr Pro Lys
                    645                    650                    655
Leu Phe Asn Ser Leu Leu Leu Gly Pro Thr Ala Ser Asn Asn Lys Thr
                    660                    665                    670
Glu Gly Ser Ser Leu Arg Asp Leu Leu His Ser Gly Pro Gly Lys Leu
                    675                    680                    685
Pro Gln Thr Pro Leu Asp Thr Gly Ile Pro Phe Pro Pro Val Phe Ser
          690                    695                    700
Thr Ser Ser Ala Gly Val Lys Ser Lys Ala Ser Leu Pro Asn Phe Leu
705                     710                    715                    720
Asp His Ile Ile Ala Ser Val Val Glu Asn Lys Lys Thr Ser Asp Ala
                    725                    730                    735
Ser Lys Arg Ala Cys Asn Leu Thr Asp Thr Gln Lys Glu Val Lys Glu
                    740                    745                    750
Met Val Met Gly Leu Asn Val Leu Asp Pro His Thr Ser His Ser Trp
          755                    760                    765
Leu Cys Asp Gly Arg Leu Leu Cys Leu His Asp Pro Ser Asn Lys Asn
          770                    775                    780
Asn Trp Lys Ile Phe Arg Glu Cys Trp Lys Gln Gly Gln Pro Val Leu
785                     790                    795                    800
Val Ser Gly Val His Lys Lys Leu Lys Ser Glu Leu Trp Lys Pro Glu
                    805                    810                    815
Ala Phe Ser Gln Glu Phe Gly Asp Gln Asp Val Asp Leu Val Asn Cys
          820                    825                    830
Arg Asn Cys Ala Ile Ile Ser Asp Val Lys Val Arg Asp Phe Trp Asp
          835                    840                    845
Gly Phe Glu Ile Ile Cys Lys Arg Leu Arg Ser Glu Asp Gly Gln Pro
          850                    855                    860
Met Val Leu Lys Leu Lys Asp Trp Pro Pro Gly Glu Asp Phe Arg Asp
865                     870                    875                    880
Met Met Pro Thr Arg Phe Glu Asp Leu Met Glu Asn Leu Pro Leu Pro
                    885                    890                    895
Glu Tyr Thr Lys Arg Asp Gly Arg Leu Asn Leu Ala Ser Arg Leu Pro
          900                    905                    910
Ser Tyr Phe Val Arg Pro Asp Leu Gly Pro Lys Met Tyr Asn Ala Tyr
          915                    920                    925
Gly Leu Ile Thr Ala Glu Asp Arg Arg Val Gly Thr Thr Asn Leu His
          930                    935                    940
Leu Asp Val Ser Asp Ala Val Asn Val Met Val Tyr Val Gly Ile Pro
945                     950                    955                    960
Ile Gly Glu Gly Ala His Asp Glu Glu Val Leu Lys Thr Ile Asp Glu
                    965                    970                    975
Gly Asp Ala Asp Glu Val Thr Lys Gln Arg Ile His Asp Gly Lys Glu
                    980                    985                    990
Lys Pro Gly Ala Leu Trp His Ile Tyr Ala Ala Lys Asp Ala Glu Lys
          995                    1000                   1005
Ile Arg Glu Leu Leu Arg Lys Val Gly Glu Glu Gln Gly Gln Glu Asn
          1010                   1015                   1020
Pro Pro Asp His Asp Pro Ile His Asp Gln Ser Trp Tyr Leu Asp Gln
1025                    1030                   1035                   1040
Thr Leu Arg Lys Arg Leu Tyr Glu Glu Tyr Gly Val Gln Gly Trp Ala
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              1045                    1050                    1055
    Ile Val Gln Phe Leu Gly Asp Ala Val Phe Ile Pro Ala Gly Ala Pro
                  1060                    1065                    1070
    His Gln Val His Asn Leu Tyr Ser Cys Ile Lys Val Ala Glu Asp Phe
              1075                    1080                    1085
    Val Ser Pro Glu His Val Lys His Cys Phe Arg Leu Thr Gln Glu Phe
          1090                    1095                    1100
    Arg His Leu Ser Asn Thr His Thr Asn His Glu Asp Lys Leu Gln Val
    1105                    1110                    1115                    1120
    Lys Asn Ile Ile Tyr His Ala Val Lys Asp Ala Val Gly Thr Leu Lys
                  1125                    1130                    1135
    Ala His Glu Ser Lys Leu Ala Arg Ser
                  1140                    1145
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<210> 4595
<211> 935
<212> DNA
<213> Homo sapiens

<400> 4595
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180
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720
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780
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935
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<210> 4596

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<211> 169
<212> PRT
<213> Homo sapiens

<400> 4596
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            20                  25                  30
Phe Leu Gly Thr Ser Ile Ser Ser Ser Ser Ser Trp Ala Pro Leu Arg
        35                  40                  45
Gly Arg Glu Ala Ala Leu Pro Gly Pro Ala Gly Asp Xaa Ala Val Lys
    50                  55                  60
Gly Pro Ala Asp Pro Ala Ala Gln His Ser Arg Asp Gly Gln Gly Gly
65                  70                  75                  80
Trp Pro Pro Ala Gln Gly Thr Ala Ser Thr Ala Gly Lys Ser Gly Ala
                85                  90                  95
Pro Gly Ala Trp Ser Val Gly Gly Ala Thr Gly Pro Arg Gly Ala Lys
            100                 105                 110
Gly Pro Arg Thr Gly Arg Pro Ala Pro Ser Pro Gly Ser Pro Pro Arg
        115                 120                 125
Glu Ser Arg Cys Leu Ala Pro Gly Pro Ser Arg Leu Asp Pro Gly Pro
    130                 135                 140
Ala Xaa Ala Ala Ala Pro Gly Ala Leu Arg Pro Pro Ala Asp Pro Ser
145                 150                 155                 160
Gln Ala Arg Pro Arg Arg Gly Ser Asn
                165

<210> 4597
<211> 515
<212> DNA
<213> Homo sapiens

<400> 4597
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515

<210> 4598
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<211> 135
<212> PRT
<213> Homo sapiens

<400> 4598
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| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

Thr Lys Ser Gln Pro Arg Asp Ser Gly Arg Pro Phe Gln Leu Thr Thr
         20   25   30

Pro Gly Pro Trp Gly Val Gly Arg Gly Thr Cys Leu Thr Ala Gln Leu
         35   40   45

Leu Leu Ser Ala Pro Phe Cys Leu Leu Pro Ala Leu Ser Gln Ala Val
      50   55   60

Ser Pro Arg Asn Ser Leu Arg Asn Ile Leu Thr Leu Asn Ser Thr Ala
65   70   75   80

Glu Pro Ser Ser Trp Glu Ser Arg Glu Arg Pro Leu Gln Ser Arg Asn
               85   90   95

Val Tyr Ser Ser Ala Ser Phe Ser Glu His Leu Asp Gly Gly Cys Ser
            100   105   110

Pro Leu Val Leu Gln Ser Leu Ala Arg Arg Ile Ser Ser Thr Trp Leu
         115   120   125

Val Asp Gln Ser Leu Arg Glu
   130   135

<210> 4599
<211> 2314
<212> DNA
<213> Homo sapiens

<400> 4599
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120
ggaggcaggt tccgcacgaa ataaatcaga atgagttatg cagaaaaacc cgatgaaatc
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240
cgcctcatca tgaactacct ggtcacagag ggctttaagg aagcagcgga gaagtttcga
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720

3798

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1800
gatctgccct ccagcatctc ggcagcatct catcctccat cgtcagccgg ctctgccgat
1860
gtcctgcttc tgttcactca cagaactgtc ccctgctccg tggtgggcag gagggaagtg
1920
gtgcagggct gcgtgcattg cctgcgagtc gggacagttg atgggcacat ggccttgtag
1980
ctctgggcac agatgtgttt ggattcattg cagcggacca ccgggcactg ttgaccccac
2040
tgagcagtgc taagtgttgg tttagtggat gttcgtggaa ttgctgatcc atccaagggc
2100
gtcctttgga gccagtggag cctgccggcg catctgaggg gcagaatgct gctagcactt
2160
gaatctggga tctcgcctta ttctcaagta gcaaggcatc tcgacaagca tggtctaggt
2220
ctggtggcca gcttgccagt acctgagccg gtcgggtcat ctgcctctga gggaccgtcc
2280
tcaccgagct cctgcatccc ttgagtgttg atca
2314
```

<210> 4600
<211> 228
<212> PRT
<213> Homo sapiens

<400> 4600
Met Ser Tyr Ala Glu Lys Pro Asp Glu Ile Thr Lys Asp Glu Trp Met
1   5   10   15
Glu Lys Leu Asn Asn Leu His Val Gln Arg Ala Asp Met Asn Arg Leu
            20   25   30
Ile Met Asn Tyr Leu Val Thr Glu Gly Phe Lys Glu Ala Ala Glu Lys
        35   40   45
Phe Arg Met Glu Ser Gly Ile Glu Pro Ser Val Asp Leu Glu Thr Leu
    50   55   60
Asp Glu Arg Ile Lys Ile Arg Glu Met Ile Leu Lys Gly Gln Ile Gln
65   70   75   80
Glu Ala Ile Ala Leu Ile Asn Ser Leu His Pro Glu Leu Leu Asp Thr
                85   90   95
Asn Arg Tyr Leu Tyr Phe His Leu Gln Gln Gln His Leu Ile Glu Leu
            100   105   110
Ile Arg Gln Arg Glu Thr Glu Ala Ala Leu Glu Phe Ala Gln Thr Gln
        115   120   125
Leu Ala Glu Gln Gly Glu Glu Ser Arg Glu Cys Leu Thr Glu Met Glu
    130   135   140
Arg Thr Leu Ala Leu Leu Ala Phe Asp Ser Pro Glu Glu Ser Pro Phe
145   150   155   160
Gly Asp Leu Leu His Thr Met Gln Arg Gln Lys Val Trp Ser Glu Val
                165   170   175
Asn Gln Ala Val Leu Asp Tyr Glu Asn Arg Glu Ser Thr Pro Lys Leu
            180   185   190
Ala Lys Leu Leu Lys Leu Leu Leu Trp Ala Gln Asn Glu Leu Asp Gln
        195   200   205
Lys Lys Val Lys Tyr Pro Lys Met Thr Asp Leu Ser Lys Gly Val Ile
    210   215   220
Glu Glu Pro Lys
225

<210> 4601
<211> 916
<212> DNA
<213> Homo sapiens

<400> 4601
aagcttaaca aacaacagtt gcagttactg aaagaacggt tccaggcctt cctcaatggg
60
gaaacccaaa ttgtagctga cgaagcattt tgcaacgcag ttcggagtta ttatgaggtt
120
tttctaaaga gtgaccgagt ggccagaatg gtacagagtg gagggtgttc tgctaatgac
180
ttcagagaag tatttaagaa aaacatagaa aaacgtgtgc ggagtttgcc agaaatagat
240
ggcttgagca aagagacagt gttgagctca tggatagcca aatatgatgc catttacaga
300

3800

```
ggtgaagagg acttgtgcaa acagccaaat agaatggccc taagtgcagt gtctgaactt
360
attctgagca aggaacaact ctatgaaatg tttcagcaga ttctgggtat taaaaaacta
420
gaacaccagc tcctttataa tgcatgtcag ctggataacg cagatgaaca agcagcccag
480
atcagaaggg aacttgatgg ccggctgcaa ttggcagata aaatggcaaa ggaaagaaaa
540
ttccccaaat ttatagcaaa agatatggag aatatgtata tagaagagtt gcggtcttca
600
gtgaatttgc taatggccaa tttggaaagt cttccagttt cgaaaggtgg tccggaattt
660
aaattacaaa aattaaaacg ttcacagaac tctgcatttt tggacatagg agatgagaat
720
gagattcagc tgtcaaagtc cgacgtggta ctgtcattca ccttagagat tgtcataatg
780
gaagtgcaag gcctgaagtc agttgctccc aatcgaattg tttactgtac aatggaagtg
840
gaaggagaaa aacttcagac agaccaggcc gaagcctcaa ggccacaatg gggggactca
900
ggggaatttc accccc
916


<210> 4602
<211> 305
<212> PRT
<213> Homo sapiens

<400> 4602
Lys Leu Asn Lys Gln Gln Leu Gln Leu Leu Lys Glu Arg Phe Gln Ala
1               5                   10                  15
Phe Leu Asn Gly Glu Thr Gln Ile Val Ala Asp Glu Ala Phe Cys Asn
            20                  25                  30
Ala Val Arg Ser Tyr Tyr Glu Val Phe Leu Lys Ser Asp Arg Val Ala
        35                  40                  45
Arg Met Val Gln Ser Gly Gly Cys Ser Ala Asn Asp Phe Arg Glu Val
    50                  55                  60
Phe Lys Lys Asn Ile Glu Lys Arg Val Arg Ser Leu Pro Glu Ile Asp
65                  70                  75                  80
Gly Leu Ser Lys Glu Thr Val Leu Ser Ser Trp Ile Ala Lys Tyr Asp
                85                  90                  95
Ala Ile Tyr Arg Gly Glu Glu Asp Leu Cys Lys Gln Pro Asn Arg Met
            100                 105                 110
Ala Leu Ser Ala Val Ser Glu Leu Ile Leu Ser Lys Glu Gln Leu Tyr
        115                 120                 125
Glu Met Phe Gln Gln Ile Leu Gly Ile Lys Lys Leu Glu His Gln Leu
    130                 135                 140
Leu Tyr Asn Ala Cys Gln Leu Asp Asn Ala Asp Glu Gln Ala Ala Gln
145                 150                 155                 160
Ile Arg Arg Glu Leu Asp Gly Arg Leu Gln Leu Ala Asp Lys Met Ala
                165                 170                 175
Lys Glu Arg Lys Phe Pro Lys Phe Ile Ala Lys Asp Met Glu Asn Met
            180                 185                 190
Tyr Ile Glu Glu Leu Arg Ser Ser Val Asn Leu Leu Met Ala Asn Leu
```

3801

```
              195               200               205
    Glu Ser Leu Pro Val Ser Lys Gly Gly Pro Glu Phe Lys Leu Gln Lys
        210               215               220
    Leu Lys Arg Ser Gln Asn Ser Ala Phe Leu Asp Ile Gly Asp Glu Asn
    225               230               235               240
    Glu Ile Gln Leu Ser Lys Ser Asp Val Val Leu Ser Phe Thr Leu Glu
                  245               250               255
    Ile Val Ile Met Glu Val Gln Gly Leu Lys Ser Val Ala Pro Asn Arg
                  260               265               270
    Ile Val Tyr Cys Thr Met Glu Val Glu Gly Glu Lys Leu Gln Thr Asp
                  275               280               285
    Gln Ala Glu Ala Ser Arg Pro Gln Trp Gly Asp Ser Gly Glu Phe His
        290               295               300
    Pro
    305
```

```
<210> 4603
<211> 2090
<212> DNA
<213> Homo sapiens

<400> 4603
gcagagcggg ccggccaaga gcccctcaag accatcctgg atgcccagga cctggattgc
60
tactttaccc ccatgaagcc cgagagtctg gagaactcca ttctggattc actggagcca
120
cagagcctgg ccagcctgct gagtgagtca gagagtcccc aggaagctgg ccgcgggcac
180
ccctccttcc tgccccagca gaaggaatca tctgaggcca gtgagctcat cctctactct
240
ctggaggcag aagtgacagt cacagggaca gacagccagt attgcaggaa ggaggtggag
300
gccgggcctg agaccagca gggcgactcc tacctcaggg tgtcctccga cagcccaaag
360
gaccagagcc cgcctgagga ctcgggggag tcagaggccg acctggagtg cagcttcgca
420
gccatccact ccccagctcc gcctcctgac cctgcccctc ggtttgccac gtcgctgccc
480
catttcccag gatgcgcagg tcccacagaa gatgagctgt ccctgcccga gggacccagc
540
gtccccagca gctccctacc ccagactccg gagcaggaga gttcctccg ccaccacttt
600
gagacactga ctgagtcccc ctgcagagct ctgggagacg tggaggcctc tgaagctgaa
660
gaccacttct tcaacccacg cctgagtatc tccacgcagt tcctctcaag cctccagaag
720
gcatccaggt tcacccatac cttccctccc cgggcaaccc agtgccttgt gaagtctcca
780
gaggtcaagc tcatggaccg aggcggaagc cagcccagag caggtactgg ctacgcctcc
840
ccagacagga cccacgtcct cgctgcaggg aaggctgaag agaccctgga ggcctggcgc
900
ccaccacctc cctgccttac gagcctggcg tcctgtgtcc ctgcttcctc cgtgctgccc
960
```

```
acagatagga atctcccaac gcccacatct gcacccaccc caggcctggc tcagggtgtc
1020
catgcccct ccacctgttc ctacatggag gccactgcca gctcccgtgc caggatatca
1080
cgcagcatct ccctcggtga cagtgagggc cctatcgtgg ccacactggc ccagcccctc
1140
cgtaggccat cgtccgttgg ggagctggcc tccttgggcc aggagcttca ggccatcacc
1200
accgcgacaa cacccagttt ggacagtgag ggccaagagc ctgccctgcg ttcctggggc
1260
aaccacgagg cccgggccaa cctgagactg accctgtcaa gtgcctgtga tgggctcctg
1320
ctgcccccg tggatacccca gcctggcgtc accgtccctg cagtgagctt cccagccct
1380
agccctgtgg aagagagcgc cctgaggctc cacggctctg cctttcgccc aagtctccca
1440
gctcctgagt cccctggcct tcctgcccac cccagtaacc cccagcttcc agaggcccgg
1500
cctggcatcc ctggcggcac tgcctccctc ctggagccca cctccggtgc acttggtctg
1560
ttccagggca gccctgcccg ctggagtgag ccctgggtgc cggttgaagc cctgcccca
1620
tctcccttg agctgagcgg gtggggaaca tcttgcacag gctgcagacc accttccaag
1680
aagccctcga cctttaccgt gtgttggtct ccagtggcca ggtggacacc gggcagcagc
1740
aggcacggac tgagctggtc tccaccttcc tgtggatcca cagccagctg gaggctgaat
1800
gcctggtggg gactagtgtg gccccagccc aggctctgcc cagcccagga cccccgtccc
1860
caccgacgct gtaccccctg gccagcccag acctgcaggc cctgctggaa cactactcgg
1920
agctgctggt gcaggccgtg cggaggaagg cacggggca ctgagggcgc agcccctcca
1980
ccgcagccct gctgcttctg aggacttagg tattttaagc gaataaactg acagctttga
2040
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2090
```

```
<210> 4604
<211> 666
<212> PRT
<213> Homo sapiens
```

```
<400> 4604
Ala Glu Arg Ala Gly Gln Glu Pro Leu Lys Thr Ile Leu Asp Ala Gln
1               5                   10                  15
Asp Leu Asp Cys Tyr Phe Thr Pro Met Lys Pro Glu Ser Leu Glu Asn
            20                  25                  30
Ser Ile Leu Asp Ser Leu Glu Pro Gln Ser Leu Ala Ser Leu Leu Ser
        35                  40                  45
Glu Ser Glu Ser Pro Gln Glu Ala Gly Arg Gly His Pro Ser Phe Leu
    50                  55                  60
Pro Gln Gln Lys Glu Ser Ser Glu Ala Ser Glu Leu Ile Leu Tyr Ser
```

3803

```
65                    70                    75                    80
Leu Glu Ala Glu Val Thr Val Thr Gly Thr Asp Ser Gln Tyr Cys Arg
            85                    90                    95
Lys Glu Val Glu Ala Gly Pro Gly Asp Gln Gln Gly Asp Ser Tyr Leu
            100                   105                   110
Arg Val Ser Ser Asp Ser Pro Lys Asp Gln Ser Pro Pro Glu Asp Ser
            115                   120                   125
Gly Glu Ser Glu Ala Asp Leu Glu Cys Ser Phe Ala Ala Ile His Ser
    130                   135                   140
Pro Ala Pro Pro Pro Asp Pro Ala Pro Arg Phe Ala Thr Ser Leu Pro
145                   150                   155                   160
His Phe Pro Gly Cys Ala Gly Pro Thr Glu Asp Glu Leu Ser Leu Pro
            165                   170                   175
Glu Gly Pro Ser Val Pro Ser Ser Ser Leu Pro Gln Thr Pro Glu Gln
            180                   185                   190
Glu Lys Phe Leu Arg His His Phe Glu Thr Leu Thr Glu Ser Pro Cys
            195                   200                   205
Arg Ala Leu Gly Asp Val Glu Ala Ser Glu Ala Glu Asp His Phe Phe
    210                   215                   220
Asn Pro Arg Leu Ser Ile Ser Thr Gln Phe Leu Ser Ser Leu Gln Lys
225                   230                   235                   240
Ala Ser Arg Phe Thr His Thr Phe Pro Pro Arg Ala Thr Gln Cys Leu
            245                   250                   255
Val Lys Ser Pro Glu Val Lys Leu Met Asp Arg Gly Gly Ser Gln Pro
            260                   265                   270
Arg Ala Gly Thr Gly Tyr Ala Ser Pro Asp Arg Thr His Val Leu Ala
            275                   280                   285
Ala Gly Lys Ala Glu Glu Thr Leu Glu Ala Trp Arg Pro Pro Pro Pro
            290                   295                   300
Cys Leu Thr Ser Leu Ala Ser Cys Val Pro Ala Ser Ser Val Leu Pro
305                   310                   315                   320
Thr Asp Arg Asn Leu Pro Thr Pro Thr Ser Ala Pro Thr Pro Gly Leu
            325                   330                   335
Ala Gln Gly Val His Ala Pro Ser Thr Cys Ser Tyr Met Glu Ala Thr
            340                   345                   350
Ala Ser Ser Arg Ala Arg Ile Ser Arg Ser Ile Ser Leu Gly Asp Ser
            355                   360                   365
Glu Gly Pro Ile Val Ala Thr Leu Ala Gln Pro Leu Arg Arg Pro Ser
    370                   375                   380
Ser Val Gly Glu Leu Ala Ser Leu Gly Gln Glu Leu Gln Ala Ile Thr
385                   390                   395                   400
Thr Ala Thr Thr Pro Ser Leu Asp Ser Glu Gly Gln Glu Pro Ala Leu
            405                   410                   415
Arg Ser Trp Gly Asn His Glu Ala Arg Ala Asn Leu Arg Leu Thr Leu
            420                   425                   430
Ser Ser Ala Cys Asp Gly Leu Leu Leu Pro Pro Val Asp Thr Gln Pro
    435                   440                   445
Gly Val Thr Val Pro Ala Val Ser Phe Pro Ala Pro Ser Pro Val Glu
    450                   455                   460
Glu Ser Ala Leu Arg Leu His Gly Ser Ala Phe Arg Pro Ser Leu Pro
465                   470                   475                   480
Ala Pro Glu Ser Pro Gly Leu Pro Ala His Pro Ser Asn Pro Gln Leu
            485                   490                   495
Pro Glu Ala Arg Pro Gly Ile Pro Gly Gly Thr Ala Ser Leu Leu Glu
```

3804

```
                    500                     505                     510
        Pro Thr Ser Gly Ala Leu Gly Leu Phe Gln Gly Ser Pro Ala Arg Trp
                515                     520                     525
        Ser Glu Pro Trp Val Pro Val Glu Ala Leu Pro Pro Ser Pro Leu Glu
                530                     535                     540
        Leu Ser Gly Trp Gly Thr Ser Cys Thr Gly Cys Arg Pro Pro Ser Lys
        545                     550                     555                     560
        Lys Pro Ser Thr Phe Thr Val Cys Trp Ser Pro Val Ala Arg Trp Thr
                        565                     570                     575
        Pro Gly Ser Ser Arg His Gly Leu Ser Trp Ser Pro Pro Ser Cys Gly
                        580                     585                     590
        Ser Thr Ala Ser Trp Arg Leu Asn Ala Trp Trp Gly Leu Val Trp Pro
                595                     600                     605
        Gln Pro Arg Leu Cys Pro Ala Gln Asp Pro Arg Pro His Arg Arg Cys
                610                     615                     620
        Thr Pro Trp Pro Ala Gln Thr Cys Arg Pro Cys Trp Asn Thr Thr Arg
        625                     630                     635                     640
        Ser Cys Trp Cys Arg Pro Cys Gly Gly Arg His Gly Gly Thr Glu Gly
                        645                     650                     655
        Ala Ala Pro Pro Pro Gln Pro Cys Cys Phe
                        660                     665
```

```
<210> 4605
<211> 2998
<212> DNA
<213> Homo sapiens

<400> 4605
nnacgcgtgg ctcgaaataa ggttggtgat gactacgtgg tgctcaaagt ggatgtggtg
60
atgaaaccgg ccaagattga acacaaggag gagaacgacc acaaagtctt ctacggggggt
120
gacctgaaag tggactgtgt ggccaccggg cttcccaatc ccgagatctc ctggagcctc
180
ccagacggga gtctggtgaa ctccttcatg cagtcggatg acagcggtgg acgcaccaag
240
cgctatgtcg tcttcaacaa tgggacactc tactttaacg aagtggggat gagggaggaa
300
ggagactaca cctgctttgc tgaaaatcag gtcgggaagg acgagatgag agtcagagtc
360
aaggtggtga cagcgcccgc caccatccgg aacaagactt gcttggcggt tcaggtgccc
420
tatggagacg tggtcactgt agcctgtgag gccaaaggag aacccatgcc caaggtgact
480
tggttgtccc caaccaacaa ggtgatcccc acctcctctg agaagtatca gatataccaa
540
gatggcactc tccttattca gaaagcccag cgttctgaca gcggcaacta cacctgcttg
600
gtcaggaaca gcgcgggaga ggataggaag acggtgtgga ttcacgtcaa cgtccagcca
660
cccaagatca acggtaaccc caaccccatc accactgtgc gggagatagc agccggggggc
720
agtcggaaac tgattgactg caaagctgaa ggcatcccca ccccgagggt gttatgggct
780
```

```
tttcccgagg gtgtggttct gccagctcca tactatggaa accggatcac tgtccatggc
840
aacggttccc tggacatcag gagtttgagg aagagcgact ccgtccagct ggtatgcatg
900
gcacgcaacg agggagggga ggccaggttg atcctgcagc tcactgtcct ggagcccatg
960
gagaaaccca tcttccacga cccgatcagc gagaagatca cggccatggc gggccacacc
1020
atcagcctca actgctctgc cgcggggacc ccgacaccca gctggtgtg ggtccttccc
1080
aatggcaccg atctgcagag tggacagcag ctgcagcgct ctaccacaa ggctgacggc
1140
atgctacaca ttagcggtct ctcctcggtg gacgctgggg cctaccgctg cgtggcccgc
1200
aatgccgctg gccacacgga gaggctggtc tccctgaagg tgggactgaa gccagaagca
1260
aacaagcagt atcataacct ggtcagcatc atcaatggtg agaccctgaa gctcccctgc
1320
accctcccg gggctgggca gggacgtttc tcctggacgc tccccaatgg catgcatctg
1380
gagggcccc aaaccctggg acgcgtttct cttctggaca atggcaccct cacggttcgt
1440
gaggcctcgg tgtttgacag gggtacctat gtatgcagga tggagacgga gtacggccct
1500
tcggtcacca gcatccccgt gattgtgatc gcctatcctc cccggatcac cagcgagccc
1560
accccggtca tctacacccg gcccgggaac accgtgaaac tgaactgcat ggctatgggg
1620
attcccaaag ctgacatcac gtgggagtta ccggataagt cgcatctgaa ggcaggggtt
1680
caggctcgtc tgtatggaaa cagatttctt caccccagg gatcactgac catccagcat
1740
gccacacaga gagatgccgg cttctacaag tgcatggcaa aaaacattct cggcagtgac
1800
tccaaaacaa cttacatcca cgtcttctga aatgtggatt ccagaatgat tgcttaggaa
1860
ctgacaacaa agcggggttt gtaagggaag ccaggttggg gaataggagc tcttaaataa
1920
tgtgtcacag tgcatggtgg cctctggtgg gtttcaagtt gaggttgatc ttgatctaca
1980
attgttggga aaaggaagca atgcagacac gagaaggagg gctcagcctt gctgagacac
2040
tttcttttgt gtttacatca tgccaggggc ttcattcagg gtgtctgtgc tctgactgca
2100
atttttcttt ttttgcaaat gccactcgac tgccttcata agcgtccata ggatatctga
2160
ggaacattca tcaaaaataa gccatagaca tgaacaacac ctcactaccc cattgaagac
2220
gcatcaccta gttaacctgc tgcagttttt acatgataga ctttgttcca gattgacaag
2280
tcatctttca gttatttcct ctgtcacttc aaaactccag cttgcccaat aaggatttag
2340
aaccagagtg actgatatat atatatattt taattcagag ttacatacat acagctacca
2400
```

```
ttttatatga aaaaagaaaa acatttcttc ctggaactca cttttatat aatgttttat
2460
atatatttt tttcctttca aatcagacga tgagactaga aggagaaata ctttctgtct
2520
tattaaaatt aataaattat tggtctttac aagacttgga tacattacag cagacatgga
2580
aatataattt taaaaattt ctctccaacc tccttcaaat tcagtcacca ctgttatatt
2640
accttctcca ggaaccctcc agtggggaag gctgcgatat tagatttcct tgtatgcaaa
2700
gtttttgttg aaagctgtgc tcagaggagg tgagaggaga ggaaggagaa aactgcatca
2760
taactttaca gaattgaatc tagagtcttc cccgaaaagc ccagaaactt ctctgcagta
2820
tctggcttgt ccatctggtc taaggtggct gcttcttccc cagccatgag tcagtttgtg
2880
cccatgaata atacacgacc tgttatttcc atgactgctt tactgtattt ttaaggtcaa
2940
tatactgtac atttgataat aaaataatat tctcccaaaa aaaaaaaaaa aaaaaaag
2998
```

```
<210> 4606
<211> 584
<212> PRT
<213> Homo sapiens
```

```
<400> 4606
Ile Glu His Lys Glu Glu Asn Asp His Lys Val Phe Tyr Gly Gly Asp
1               5                   10                  15
Leu Lys Val Asp Cys Val Ala Thr Gly Leu Pro Asn Pro Glu Ile Ser
            20                  25                  30
Trp Ser Leu Pro Asp Gly Ser Leu Val Asn Ser Phe Met Gln Ser Asp
        35                  40                  45
Asp Ser Gly Gly Arg Thr Lys Arg Tyr Val Val Phe Asn Asn Gly Thr
    50                  55                  60
Leu Tyr Phe Asn Glu Val Gly Met Arg Glu Glu Gly Asp Tyr Thr Cys
65                  70                  75                  80
Phe Ala Glu Asn Gln Val Gly Lys Asp Glu Met Arg Val Arg Val Lys
                85                  90                  95
Val Val Thr Ala Pro Ala Thr Ile Arg Asn Lys Thr Cys Leu Ala Val
            100                 105                 110
Gln Val Pro Tyr Gly Asp Val Val Thr Val Ala Cys Glu Ala Lys Gly
        115                 120                 125
Glu Pro Met Pro Lys Val Thr Trp Leu Ser Pro Thr Asn Lys Val Ile
    130                 135                 140
Pro Thr Ser Ser Glu Lys Tyr Gln Ile Tyr Gln Asp Gly Thr Leu Leu
145                 150                 155                 160
Ile Gln Lys Ala Gln Arg Ser Asp Ser Gly Asn Tyr Thr Cys Leu Val
                165                 170                 175
Arg Asn Ser Ala Gly Glu Asp Arg Lys Thr Val Trp Ile His Val Asn
            180                 185                 190
Val Gln Pro Pro Lys Ile Asn Gly Asn Pro Asn Pro Ile Thr Thr Val
        195                 200                 205
Arg Glu Ile Ala Ala Gly Gly Ser Arg Lys Leu Ile Asp Cys Lys Ala
```

```
            210                    215                    220
Glu Gly Ile Pro Thr Pro Arg Val Leu Trp Ala Phe Pro Glu Gly Val
225                    230                    235                    240
Val Leu Pro Ala Pro Tyr Tyr Gly Asn Arg Ile Thr Val His Gly Asn
                   245                    250                    255
Gly Ser Leu Asp Ile Arg Ser Leu Arg Lys Ser Asp Ser Val Gln Leu
               260                    265                    270
Val Cys Met Ala Arg Asn Glu Gly Gly Glu Ala Arg Leu Ile Leu Gln
        275                    280                    285
Leu Thr Val Leu Glu Pro Met Glu Lys Pro Ile Phe His Asp Pro Ile
        290                    295                    300
Ser Glu Lys Ile Thr Ala Met Ala Gly His Thr Ile Ser Leu Asn Cys
305                    310                    315                    320
Ser Ala Ala Gly Thr Pro Thr Pro Ser Leu Val Trp Val Leu Pro Asn
                   325                    330                    335
Gly Thr Asp Leu Gln Ser Gly Gln Gln Leu Gln Arg Phe Tyr His Lys
               340                    345                    350
Ala Asp Gly Met Leu His Ile Ser Gly Leu Ser Ser Val Asp Ala Gly
        355                    360                    365
Ala Tyr Arg Cys Val Ala Arg Asn Ala Ala Gly His Thr Glu Arg Leu
    370                    375                    380
Val Ser Leu Lys Val Gly Leu Lys Pro Glu Ala Asn Lys Gln Tyr His
385                    390                    395                    400
Asn Leu Val Ser Ile Ile Asn Gly Glu Thr Leu Lys Leu Pro Cys Thr
                   405                    410                    415
Pro Pro Gly Ala Gly Gln Gly Arg Phe Ser Trp Thr Leu Pro Asn Gly
               420                    425                    430
Met His Leu Glu Gly Pro Gln Thr Leu Gly Arg Val Ser Leu Leu Asp
        435                    440                    445
Asn Gly Thr Leu Thr Val Arg Glu Ala Ser Val Phe Asp Arg Gly Thr
    450                    455                    460
Tyr Val Cys Arg Met Glu Thr Glu Tyr Gly Pro Ser Val Thr Ser Ile
465                    470                    475                    480
Pro Val Ile Val Ile Ala Tyr Pro Pro Arg Ile Thr Ser Glu Pro Thr
                   485                    490                    495
Pro Val Ile Tyr Thr Arg Pro Gly Asn Thr Val Lys Leu Asn Cys Met
               500                    505                    510
Ala Met Gly Ile Pro Lys Ala Asp Ile Thr Trp Glu Leu Pro Asp Lys
        515                    520                    525
Ser His Leu Lys Ala Gly Val Gln Ala Arg Leu Tyr Gly Asn Arg Phe
    530                    535                    540
Leu His Pro Gln Gly Ser Leu Thr Ile Gln His Ala Thr Gln Arg Asp
545                    550                    555                    560
Ala Gly Phe Tyr Lys Cys Met Ala Lys Asn Ile Leu Gly Ser Asp Ser
                   565                    570                    575
Lys Thr Thr Tyr Ile His Val Phe
               580
```

```
<210> 4607
<211> 456
<212> DNA
<213> Homo sapiens

<400> 4607
```

nnagatctct gagggataga ttgccagaga aggggaagtt tcagtccagg catatgtgca
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gagccttgat caattgagga aaagaaaggc tgtttacac aagagagaag ctgatgttgt
120
ttatgcactt cctaggtagt tagaaacaaa cctgtggcaa ggcaggctcc tggcaaacgg
180
aagtgcaatt gtcggcaaga gatgcggacc acccagctgg ccctgggcg cttccaaatg
240
acccaggagg tggtctgcga cgaatgccct aatgtcaaac tagtgaatga agaacgaacg
300
ctggaagtag aaatagagcc tggggtgaga cacggcatgg agtacccctt tattggagaa
360
ggtgagcctc acgtggatgg gnagcctgga gatttacggt tccgaatcaa agttgtcaag
420
cacccaatat ttgaaaggag aggagatgat ctgtac
456

<210> 4608
<211> 107
<212> PRT
<213> Homo sapiens

<400> 4608
Val Val Arg Asn Lys Pro Val Ala Arg Gln Ala Pro Gly Lys Arg Lys
1   5   10   15
Cys Asn Cys Arg Gln Glu Met Arg Thr Thr Gln Leu Gly Pro Gly Arg
            20   25   30
Phe Gln Met Thr Gln Glu Val Val Cys Asp Glu Cys Pro Asn Val Lys
        35   40   45
Leu Val Asn Glu Glu Arg Thr Leu Glu Val Glu Ile Glu Pro Gly Val
    50   55   60
Arg Asp Gly Met Glu Tyr Pro Phe Ile Gly Glu Gly Glu Pro His Val
65   70   75   80
Asp Gly Xaa Pro Gly Asp Leu Arg Phe Arg Ile Lys Val Val Lys His
                85   90   95
Pro Ile Phe Glu Arg Arg Gly Asp Asp Leu Tyr
                100   105

<210> 4609
<211> 904
<212> DNA
<213> Homo sapiens

<400> 4609
ncggccgccg cgctgcagat ggcggaaatg gatccggtag ccgagttccc ccagcctccc
60
ggtgctgcgc gctgggctga ggttatggct cgcttcgcgg ccaggctggg cgcgcagggc
120
cggcgggtgg tgttggttac gtcaggcggc accaaggtcc cactggaagc gcggccggtg
180
cgcttcctgg acaacttcag cagcgggcgg cgcggtgcaa cctcggccga ggccttccta
240
gccgccggct acggggtcct gttcttgtat cgcgctcgct ctgccttccc ctatgcccac
300

```
cgcttcccac cccagacttg gctgtccgct ctgcggcctt cgggcccagc cctttcgggc
360
ttgctgagcc tggaggccga ggagaatgca cttccgggtt ttgctgaggc tctgaggagc
420
taccaggagg ctgcggctgc aggcaccttc ctggcagtag agttcaccac tttggcggac
480
tatttgcatc tgttgcaggc tgcggcccag gcactcaatc cgctaggccc ttctgcgatg
540
ttttacctgg ctgcggctgt gtcagatttc tatgttcctg tctctgaaat gcctgaacac
600
aagatccagt catctggggg cccactgcag ggaaaagttc agttagaaga catacttcac
660
catcttgaaa aagaagaaat caatcccctt gctactacag aagaacaact ctgtttggtg
720
cttattccag ccagcacagt gaagacaggc tgaggactgc taccacagat gtagaagagc
780
ttatagtgaa gcacatgggt gaaacaaaag aagtgagaac taatagcata gaattttaaa
840
gacacctgtg attttgttca ttgcccttca ttaaattgac atattaaaaa aaaaaaaaaa
900
aaaa
904
```

```
<210> 4610
<211> 250
<212> PRT
<213> Homo sapiens
```

```
<400> 4610
Xaa Ala Ala Ala Leu Gln Met Ala Glu Met Asp Pro Val Ala Glu Phe
 1               5                  10                  15
Pro Gln Pro Pro Gly Ala Ala Arg Trp Ala Glu Val Met Ala Arg Phe
            20                  25                  30
Ala Ala Arg Leu Gly Ala Gln Gly Arg Arg Val Val Leu Val Thr Ser
        35                  40                  45
Gly Gly Thr Lys Val Pro Leu Glu Ala Arg Pro Val Arg Phe Leu Asp
    50                  55                  60
Asn Phe Ser Ser Gly Arg Arg Gly Ala Thr Ser Ala Glu Ala Phe Leu
65                  70                  75                  80
Ala Ala Gly Tyr Gly Val Leu Phe Leu Tyr Arg Ala Arg Ser Ala Phe
                85                  90                  95
Pro Tyr Ala His Arg Phe Pro Pro Gln Thr Trp Leu Ser Ala Leu Arg
            100                 105                 110
Pro Ser Gly Pro Ala Leu Ser Gly Leu Leu Ser Leu Glu Ala Glu Glu
        115                 120                 125
Asn Ala Leu Pro Gly Phe Ala Glu Ala Leu Arg Ser Tyr Gln Glu Ala
    130                 135                 140
Ala Ala Ala Gly Thr Phe Leu Ala Val Glu Phe Thr Thr Leu Ala Asp
145                 150                 155                 160
Tyr Leu His Leu Leu Gln Ala Ala Ala Gln Ala Leu Asn Pro Leu Gly
                165                 170                 175
Pro Ser Ala Met Phe Tyr Leu Ala Ala Ala Val Ser Asp Phe Tyr Val
            180                 185                 190
Pro Val Ser Glu Met Pro Glu His Lys Ile Gln Ser Ser Gly Gly Pro
```

```
        195                   200                   205
Leu Gln Gly Lys Val Gln Leu Glu Asp Ile Leu His His Leu Glu Lys
     210                   215                   220
Glu Glu Ile Asn Pro Leu Ala Thr Thr Glu Glu Gln Leu Cys Leu Val
225                   230                   235                   240
Leu Ile Pro Ala Ser Thr Val Lys Thr Gly
              245                   250
```

```
<210> 4611
<211> 1946
<212> DNA
<213> Homo sapiens
```

```
<400> 4611
cccggggctt cggcggcggc ggcccgcgag gggcctgggc gcatgcgcag cgaggttcca
60
cgtgagcgcc tgcgtttctc ctcaaaccta acgatgccgc cggagcggag gagacgaatg
120
aaactggacc ggagaaccgg agcgaagccg aagcggaagc ccggaatgag gccggactgg
180
aaagccggag cggggccagg cgggcctccc caaaagcctg ccccttcatc ccagcggaaa
240
ccgccggccc ggccgagcgc ggcggccgct gcgattgcag tcgcggcggc ggaggaagag
300
agacggctcc ggcagcggaa ccgcctgagg ctggaggagg acaaaccggc cgtggagcgg
360
tgcttggagg agctggtctt cggcgacgtc gagaacgacg aggacgcgtt gctgcggcgt
420
ctgcgaggcc cgagggttca agaacatgaa gactcgggtg actcagaagt ggagaatgaa
480
gcaaaaggta attttccacc tcaaaagaag ccagtttggg tggatgaaga agatgaagat
540
gaggaaatgg ttgacatgat gaacaatcgg tttcggaagg atatgatgaa aaatgctagt
600
gaaagtaaac tttcgaaaga caaccttaaa aagagactta agaagaatt ccaacatgcc
660
atgggaggag tacctgcctg ggcagagact actaagcgga aaacatcttc agatgatgaa
720
agtgaagagg atgaagatga tttgttgcaa aggactggga atttcatatc cacatcaact
780
tctcttccaa gaggcatctt gaagatgaag aactgccagc atgcgaatgc tgaacgtcct
840
actgttgctc ggatctcatc tgtgcagttc catcccggtg cacagattgt gatggttgct
900
ggattagata atgctgtatc actatttcag gttgatggga aaacaaatcc taaaattcag
960
agcatctatt tggaaaggtt tccaatcttt aaggcttgtt ttagtgctaa tggggaagaa
1020
gttttagcca cgagtaccca cagcaaggtt ctttatgtct atgacatgct ggctggaaag
1080
ttaattcctg tgcatcaagt gagaggtttg aaagagaaga tagtgaggag cttttgaagtc
1140
tccccagatg ggtccttctt gctcataaat ggcattgctg gatatttgca tttgctagca
1200
```

```
atgaagacca aagaactgat tggaagcatg aaaattaatg gaagggttgc agcatccaca
1260
ttctcttcag atagtaagaa agtatacgcc tcttcggggg atggagaagt ttatgtttgg
1320
gatgtgaact caaggaagtg ccttaacaga tttgttgatg aaggcagttt atatggatta
1380
agcattgcca catctaggaa tggacagtat gttgcttgtg gttctaattg tggagtggta
1440
aatatataca atcaagattc ttgtctccaa gaaacaaacc caaagccaat aaaagctata
1500
atgaacttgg ttacaggtgt tacttctctg accttcaatc ctactacaga aatcttggca
1560
attgcttcag aaaaaatgaa agaagcagtc agattggttc atcttccttc ctgtacagta
1620
ttttcaaact cccagtcat taaaaataag aatatttctc atgttcatac catggatttt
1680
tctccgagaa gtggatactt tgccttgggg aatgaaaagg gcaaggccct gatgtatagg
1740
ttgcaccatt actcagactt ctaaagagac tatttgaagt ccagttgagt cacaagagaa
1800
gcctgtcttg atatatcatc tcagaaactt tcctgaatat gtgataatat atggaaaatg
1860
atttatagat ccagctgtgc ttaagagcca gtaatgtctt aataaacatg tggcagcttt
1920
tgtttgaaaa aaaaaaaaaa aaaaaa
1946
```

```
<210> 4612
<211> 532
<212> PRT
<213> Homo sapiens
```

```
<400> 4612
Met Arg Pro Asp Trp Lys Ala Gly Ala Gly Pro Gly Gly Pro Pro Gln
1               5                   10                  15
Lys Pro Ala Pro Ser Ser Gln Arg Lys Pro Pro Ala Arg Pro Ser Ala
            20                  25                  30
Ala Ala Ala Ala Ile Ala Val Ala Ala Ala Glu Glu Glu Arg Arg Leu
            35                  40                  45
Arg Gln Arg Asn Arg Leu Arg Leu Glu Glu Asp Lys Pro Ala Val Glu
    50                  55                  60
Arg Cys Leu Glu Glu Leu Val Phe Gly Asp Val Glu Asn Asp Glu Asp
65                  70                  75                  80
Ala Leu Leu Arg Arg Leu Arg Gly Pro Arg Val Gln Glu His Glu Asp
            85                  90                  95
Ser Gly Asp Ser Glu Val Glu Asn Glu Ala Lys Gly Asn Phe Pro Pro
            100                 105                 110
Gln Lys Lys Pro Val Trp Val Asp Glu Glu Asp Glu Asp Glu Glu Met
            115                 120                 125
Val Asp Met Met Asn Asn Arg Phe Arg Lys Asp Met Met Lys Asn Ala
            130                 135                 140
Ser Glu Ser Lys Leu Ser Lys Asp Asn Leu Lys Lys Arg Leu Lys Glu
145                 150                 155                 160
Glu Phe Gln His Ala Met Gly Gly Val Pro Ala Trp Ala Glu Thr Thr
```

```
                    165                 170                 175
Lys Arg Lys Thr Ser Ser Asp Asp Glu Ser Glu Glu Asp Glu Asp Asp
            180                 185                 190
Leu Leu Gln Arg Thr Gly Asn Phe Ile Ser Thr Ser Thr Ser Leu Pro
        195                 200                 205
Arg Gly Ile Leu Lys Met Lys Asn Cys Gln His Ala Asn Ala Glu Arg
    210                 215                 220
Pro Thr Val Ala Arg Ile Ser Ser Val Gln Phe His Pro Gly Ala Gln
225                 230                 235                 240
Ile Val Met Val Ala Gly Leu Asp Asn Ala Val Ser Leu Phe Gln Val
                245                 250                 255
Asp Gly Lys Thr Asn Pro Lys Ile Gln Ser Ile Tyr Leu Glu Arg Phe
            260                 265                 270
Pro Ile Phe Lys Ala Cys Phe Ser Ala Asn Gly Glu Glu Val Leu Ala
            275                 280                 285
Thr Ser Thr His Ser Lys Val Leu Tyr Val Tyr Asp Met Leu Ala Gly
    290                 295                 300
Lys Leu Ile Pro Val His Gln Val Arg Gly Leu Lys Glu Lys Ile Val
305                 310                 315                 320
Arg Ser Phe Glu Val Ser Pro Asp Gly Ser Phe Leu Leu Ile Asn Gly
                325                 330                 335
Ile Ala Gly Tyr Leu His Leu Leu Ala Met Lys Thr Lys Glu Leu Ile
            340                 345                 350
Gly Ser Met Lys Ile Asn Gly Arg Val Ala Ala Ser Thr Phe Ser Ser
        355                 360                 365
Asp Ser Lys Lys Val Tyr Ala Ser Ser Gly Asp Gly Glu Val Tyr Val
    370                 375                 380
Trp Asp Val Asn Ser Arg Lys Cys Leu Asn Arg Phe Val Asp Glu Gly
385                 390                 395                 400
Ser Leu Tyr Gly Leu Ser Ile Ala Thr Ser Arg Asn Gly Gln Tyr Val
                405                 410                 415
Ala Cys Gly Ser Asn Cys Gly Val Val Asn Ile Tyr Asn Gln Asp Ser
            420                 425                 430
Cys Leu Gln Glu Thr Asn Pro Lys Pro Ile Lys Ala Ile Met Asn Leu
        435                 440                 445
Val Thr Gly Val Thr Ser Leu Thr Phe Asn Pro Thr Thr Glu Ile Leu
    450                 455                 460
Ala Ile Ala Ser Glu Lys Met Lys Glu Ala Val Arg Leu Val His Leu
465                 470                 475                 480
Pro Ser Cys Thr Val Phe Ser Asn Phe Pro Val Ile Lys Asn Lys Asn
                485                 490                 495
Ile Ser His Val His Thr Met Asp Phe Ser Pro Arg Ser Gly Tyr Phe
            500                 505                 510
Ala Leu Gly Asn Glu Lys Gly Lys Ala Leu Met Tyr Arg Leu His His
        515                 520                 525
Tyr Ser Asp Phe
    530
```

<210> 4613
<211> 454
<212> DNA
<213> Homo sapiens

<400> 4613

```
cggccgcgtg tacacacagg cctataatag tgacacgctg gtgagtgttc tgggcactgt
60
gcctgcagtg ttcccttgcg gggcagggtc tgtcctacac atgcacaagc tctggtgttt
120
ctttaaggcg tttgatttct gaagattgac aaggttctgt ttattgtata ttatgtttaa
180
tgatctcagt tgtaatattg tcaagatttg ggttgtgaag attaggaagt ccttacagtg
240
aaactcattg ctcatcgtga gattcccgtt tgtaaactca tttccacgtg taaactcatt
300
tgacgttggg gccagacagg tgacaggaga gggagttggg cctcgtgggg atagtggcaa
360
attgggacgt ggcatgtttt cattaaagcg aggtgttcct ccctgtcggc tgcgtgtctc
420
tgtggcatgg ggctagcctg ccctgcccct gcag
454
```

```
<210> 4614
<211> 117
<212> PRT
<213> Homo sapiens
```

```
<400> 4614
Met Pro Arg Pro Asn Leu Pro Leu Ser Pro Arg Gly Pro Thr Pro Ser
1               5                   10                  15
Pro Val Thr Cys Leu Ala Pro Thr Ser Asn Glu Phe Thr Arg Gly Asn
            20                  25                  30
Glu Phe Thr Asn Gly Asn Leu Thr Met Ser Asn Glu Phe His Cys Lys
        35                  40                  45
Asp Phe Leu Ile Phe Thr Thr Gln Ile Leu Thr Ile Leu Gln Leu Arg
        50                  55                  60
Ser Leu Asn Ile Ile Tyr Asn Lys Gln Asn Leu Val Asn Leu Gln Lys
65                  70                  75                  80
Ser Asn Ala Leu Lys Lys His Gln Ser Leu Cys Met Cys Arg Thr Asp
                85                  90                  95
Pro Ala Pro Gln Gly Asn Thr Ala Gly Thr Val Pro Arg Thr Leu Thr
            100                 105                 110
Ser Val Ser Leu Leu
        115
```

```
<210> 4615
<211> 1350
<212> DNA
<213> Homo sapiens
```

```
<400> 4615
nntgattcgg tcccgctgtc ctaggcggga tggtgccgct gtgccaggtt gaagtattgt
60
attttgcaaa aagtgctgaa ataacaggag ttcgttcaga gaccatttct gtgcctcaag
120
aaataaaagc gttgcagctg tggaaggaga tagaaactcg acatcctgga ttggctgatg
180
ttagaaatca gataatattt gctgttcgtc aagaatatgt cgagcttgga gatcagctcc
240
```

```
tcgtgcttca gcctggagac gaaattgccg ttatcccccc cattagtgga ggatagtgct
300
tttgagccat ctaggaaaga tatggatgaa gttgaagaga aatctaaaga tgttataaac
360
tttactgccg agaaactttc agtagatgaa gtctcacagt tggtgatttc tccgctctgt
420
ggtgcaatat ccctatttgt agggactaca agaaataact ttgaagggaa aaaagtcatt
480
agcttagaat atgaagcata tctacccatg gcggaaaatg aagtcagaaa gatttgtagt
540
gacattaggc agaaatggcc agtcaaacac atagcagtgt ccatctgct tggcttggtt
600
ccagtgtcag aagcaagcac agttattgct gtgtcctcag cccacagagc tgcatctctt
660
gaagctgtga gctatgccat tgattcttta aaagccaagg tgcccatatg gaaaaaggaa
720
atatatgaag agtcatcaac ttggaaagga aacaaagagt gcttttgggc atccaacagt
780
taatcactta tgttttaga gcatgcaatc ttaactttgt taaactatta ttattgatca
840
cattttgatt tttttctctc cacatcagga tagtttactg aagcacaatc tcttatacta
900
gtgggacaaa agggagaaaa aggaagcaag ataaatgggt atgtaggatg aagggttatt
960
taaaatggaa ctaaagatag aaggaggact gtaggaagaa atggaataat ttaaatgtga
1020
ggaaagatat ctgtggtaga catgtccttc catgactaat ttctaattgt aactcaacac
1080
acattgaggt atgggccctc ctcagtgact ttaactagct cagaaacgta ctccccacc
1140
aaccccacct caccgccccc catcccggtt ctgggagagc attgttatta aggatgcatg
1200
acaggaatgt tggcagaact ggaaagtatt aaaaaagcat tatcagacag tcttgatatt
1260
atacattttc agaaatatat taaaaataat aaactaaaac ccatgatttc aaaagtttaa
1320
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
1350
```

<210> 4616
<211> 188
<212> PRT
<213> Homo sapiens

<400> 4616

```
Met Ser Ser Leu Glu Ile Ser Ser Ser Cys Phe Ser Leu Glu Thr Lys
1               5                   10                  15
Leu Pro Leu Ser Pro Pro Leu Val Glu Asp Ser Ala Phe Glu Pro Ser
            20                  25                  30
Arg Lys Asp Met Asp Glu Val Glu Glu Lys Ser Lys Asp Val Ile Asn
        35                  40                  45
Phe Thr Ala Glu Lys Leu Ser Val Asp Glu Val Ser Gln Leu Val Ile
        50                  55                  60
Ser Pro Leu Cys Gly Ala Ile Ser Leu Phe Val Gly Thr Thr Arg Asn
```

3815

```
65                        70                    75                    80
Asn Phe Glu Gly Lys Lys Val Ile Ser Leu Glu Tyr Glu Ala Tyr Leu
                     85                    90                    95
Pro Met Ala Glu Asn Glu Val Arg Lys Ile Cys Ser Asp Ile Arg Gln
                100                   105                   110
Lys Trp Pro Val Lys His Ile Ala Val Phe His Leu Leu Gly Leu Val
           115                   120                   125
Pro Val Ser Glu Ala Ser Thr Val Ile Ala Val Ser Ser Ala His Arg
           130                   135                   140
Ala Ala Ser Leu Glu Ala Val Ser Tyr Ala Ile Asp Ser Leu Lys Ala
145                   150                   155                   160
Lys Val Pro Ile Trp Lys Lys Glu Ile Tyr Glu Glu Ser Ser Thr Trp
                165                   170                   175
Lys Gly Asn Lys Glu Cys Phe Trp Ala Ser Asn Ser
                180                   185
```

`<210> 4617`
`<211> 2266`
`<212> DNA`
`<213> Homo sapiens`

`<400> 4617`
```
tccggagccg ggggactgcg acggcctgtc gcctggacaa caaggaaagc gagtcctggg
60
gggctctgct gagcggagag cggctggaca cctggatctg ctccctcctg ggttccctca
120
tggtggggct cagtggggtc ttcccgttgc ttgtcattcc cctagagatg gggaccatgc
180
tgcgctcaga agctggggcc tgggcgcctg aagcagctgc tcagcttcgc cctgggggga
240
ctcttgggca atgtgtttct gcatctgctg cccgaagcct gggcctacac gtgcagcgcc
300
agccctggtg gtgaggggca gagcctgcag cagcagcaac agctggggct gtgggtcatt
360
gctggcatcc tgaccttcct ggcgttggag aagatgttcc tggacagcaa ggaggagggg
420
accagccagg cccccaacaa agaccccact gctgctgccg ccgcactcaa tggaggccac
480
tgtctggccc agccgactgc agagcccggc ctcggtgccg tggtccggag catcaaagtc
540
agcggctacc tcaacctgct ggccaacacc atcgataact tcacccacgg gctggctgtg
600
gctgccagct ccttgtgag caagaagatc gggctcctga caaccatggc catcctcctg
660
catgagatcc cccatgaggt gggcgacttt gccatcctgc tccgggccgg ctttgaccga
720
tggagcgcag ccaagctgca actctcaaca gcgctggggg gcctactggg cgctggcttc
780
gccatctgta cccagtcccc caagggagta gaggagacgg cagcctgggt cctgcccttc
840
acctctggcg gctttctcta catcgccttg gtgaacgtgc tccctgacct cttggaagaa
900
gaggacccgt ggcgctccct gcagcagctg cttctgctct gtgcgggcat cgtggtaatg
960
```

```
gtgctgttct cgctcttcgt ggattaactt tccctgatgc cgacgcccct gcccctgca
1020
gcaataagat gctcggattc actctgtgac cgcatatgtg agaggcagag agggcgagtg
1080
gctgcgagag agaatgagcc tcccgccaga caggagggag gtgcgtgtgg atgtatgtgg
1140
tgtgcacatg tggccagagg tgtgtgcgcg agaccgacac tgtgatccct gtgctgggtc
1200
cggggcccag tgtagcgcct gtccccagcc atgctgtggt tacctctcct tgccgccctg
1260
tcaccttcac ctcctggagt aagcagcgag gaagagcagc actggtccca agcagaggcc
1320
ttgccctgct gggacccggg gagtgagagc agcccaagga tcccagggtg cagggaactc
1380
cagagctgcc cacctcccac tgcccctca gcacacac agtccccagg cggcctaggg
1440
gccaaggctg ggggcggctt tggtcccttt tcctggctct tccttcccca cttctaagcc
1500
aaagaaagga gaggcaggtg ctcctgtacc ccagccccac tcagcactga cagtccccag
1560
ctcctagtag tgagctggga ggcgcttcct aagacccttt cctcagggct gccctgggag
1620
ctcattcctg gccaacacgc cctggcagca ccagcagctc ttgccacctc cagctgccaa
1680
acagcagcct gccgggcagg gagcagcccc aggccagaga ggcctcccgg tccagctcag
1740
ggatgctcct gccagcacag gggccaggga ctcctggagc aggcacatag tgagcccggg
1800
cagccctgcc cagctcaggc cccttccctt ccccattgag gttggggtag gtggggcgg
1860
tgagggctcc acgttgtcag cgctcaggaa tgtgctccgg cagagtgctg aagccataat
1920
ccccaaccat ttcccttggc tgacgcccag gtactcagct ggcccactcc acagccaggc
1980
ctggccctgc ccttcaccgt ggatgttttc agaagtggcc atcgagaggt ctggatggtt
2040
ttatagcaac tttgctgtga ttccgtttgt atctgtaaat atttgttcta tagataagat
2100
acaaataaat attatccaca tactggctgc cttggttctg cacgccttcc atgggcagca
2160
gggccttcct tactgccact gccaggccct tttttctgaa aaaaaaaaa aaaaaaaaaa
2220
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa
2266


<210> 4618
<211> 197
<212> PRT
<213> Homo sapiens

<400> 4618
Met Phe Leu Asp Ser Lys Glu Glu Gly Thr Ser Gln Ala Pro Asn Lys
1               5                   10                  15
Asp Pro Thr Ala Ala Ala Ala Ala Leu Asn Gly Gly His Cys Leu Ala
```

```
                        20                    25                    30
     Gln Pro Thr Ala Glu Pro Gly Leu Gly Ala Val Val Arg Ser Ile Lys
              35                    40                    45
     Val Ser Gly Tyr Leu Asn Leu Leu Ala Asn Thr Ile Asp Asn Phe Thr
              50                    55                    60
     His Gly Leu Ala Val Ala Ala Ser Phe Leu Val Ser Lys Lys Ile Gly
     65                    70                    75                    80
     Leu Leu Thr Thr Met Ala Ile Leu Leu His Glu Ile Pro His Glu Val
                        85                    90                    95
     Gly Asp Phe Ala Ile Leu Leu Arg Ala Gly Phe Asp Arg Trp Ser Ala
                       100                   105                   110
     Ala Lys Leu Gln Leu Ser Thr Ala Leu Gly Gly Leu Leu Gly Ala Gly
              115                   120                   125
     Phe Ala Ile Cys Thr Gln Ser Pro Lys Gly Val Glu Glu Thr Ala Ala
              130                   135                   140
     Trp Val Leu Pro Phe Thr Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val
     145                   150                   155                   160
     Asn Val Leu Pro Asp Leu Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu
                       165                   170                   175
     Gln Gln Leu Leu Leu Leu Cys Ala Gly Ile Val Val Met Val Leu Phe
                       180                   185                   190
     Ser Leu Phe Val Asp
                       195
```

```
<210> 4619
<211> 539
<212> DNA
<213> Homo sapiens
```

```
<400> 4619
cggggacttc ttgattgagg tagggacaca ggtgtctgta tctttctgct tggggagagc
60
gccgactctc ggggagaggg tcgtagtcct ggcagcacag ccacgaggcc cagtctgggg
120
gtgcttgtgg aggctgccat gaactttcat tggtcaattt ctcccacccg ggggtgcacc
180
tgcctgggaa cctggggttg ggcctggctt gaaggccttg gccgtaaccc gttggaagga
240
ggaaaagtct gtggaatttg gtcattggtc ttgaagtaga aggtagaaag aggaggcatg
300
tggtccccat gatgttgggg acatgtgcag acctgtgggt ggtttagttg ttgcttaata
360
gggcccccaag aggagtcatt gtcctttctt gtgtcctatg ggtgagtcgg caaccactct
420
tgtgtggcag ttgctggcgt gaggtctgta acattgatgg ctaagagctt gtagatttgc
480
aggttgtgat aaccacccca tcagatggac gatggccttc caagaccaag gagcccggg
539
```

```
<210> 4620
<211> 103
<212> PRT
<213> Homo sapiens
```

```
<400> 4620
Met Gly Thr Thr Cys Leu Leu Phe Leu Pro Ser Thr Ser Arg Pro Met
1               5                   10                  15
Thr Lys Phe His Arg Leu Phe Leu Leu Pro Thr Gly Tyr Gly Gln Gly
            20                  25              Gly         30
Leu Gln Ala Arg Pro Asn Pro Arg Phe Pro Gly Arg Cys Thr Pro Gly
        35                  40                  45
Trp Glu Lys Leu Thr Asn Glu Ser Ser Trp Gln Pro Pro Gln Ala Pro
    50                  55                  60
Pro Asp Trp Ala Ser Trp Leu Cys Cys Gln Asp Tyr Asp Pro Leu Pro
65                  70                  75                  80
Glu Ser Arg Arg Ser Pro Gln Ala Glu Arg Tyr Arg His Leu Cys Pro
                85                  90                  95
Tyr Leu Asn Gln Glu Val Pro
                100
```

```
<210> 4621
<211> 2588
<212> DNA
<213> Homo sapiens
```

```
<400> 4621
ncttcctctc tggccgcgag cccctcttgt gattggtaag accttcccag ctgtgacagc
60
tgagcccaac tcgactctgt gaaacgtacc ccacccccca gcccttcttc cagtccccct
120
cttccatgag gagacccact ctgctcccac cctctgaaaa cctaaagcac agcccaaatc
180
ccccacccca gcagcatacc tagggagctc ctagtcctgg taaaacggca ggagtagggc
240
tggggatgct gagaaaggaa ccaggaatcc tgtccaggca ggtcctacct ctgcccatgt
300
ggctggccct catgtctggg tcttctcact ctactctcat tactcctccg cgcctgtcaa
360
accccctcatt gttcgcagct gatgtcactc gcagttgtga gcggccgcct ctcccgggga
420
caatgtggga ctgagcggcc cagccgccgt gccgccgccg ccgccgccgc aggacagccc
480
cagcgaggcc atttccagca catagaagag agattggaaa ccaacgtgca gaactgccag
540
tcccctgaca cgctgtgccc cacccactgc agcccagtgc tgaatgaacc ctgcccagag
600
gtgtctgtag tgagcttctg ccctagtgac ttttgagccg gccaggttgc agcgcggaca
660
cactcgcagg tcgctgtggc cccagcctcg cctgacagaa tgagcggctc ggacgggga
720
ctggaggagg agccagagct cagcatcacc ctcacgctgc ggatgctgat gcacgggaag
780
gaagtgggca gcatcatcgg gaagaagggc gagactgtaa agcgaatccg ggagcagagc
840
agtgcccgga tcaccatctc cgagggctcc tgccctgaac gcatcaccac catcaccggg
900
tctacagcag ctgtcttcca tgcagtctcc atgattgctt tcaaactgga tgaggacctt
960
```

```
tgtgctgctc ctgcaaatgg tggaaatgtc tccaggcctc cagtgaccct gcgccttgtc
1020
atccctgcca gtcagtgtgg ctcactgatt gggaaggctg gcaccaagat caaggagatc
1080
cgagagacta cgggtgccca ggtacaggtg gcaggggacc tgctccccaa ctccacagag
1140
cgagctgtta cggtatctgg ggtgcctgat gccatcatcc tgtgtgtgcg ccagatctgc
1200
gctgttatcc tggagtcccc acccaaagga gccactatcc cctaccatcc gagcctctcc
1260
ctaggtactg ttcttctctc tgccaaccag ggcttctctg tccagggtca gtatggggct
1320
gtgaccccag ctgaggtcac caagctccag cagctctcaa gccatgcggt cccctttgcc
1380
acacccagcg tggtgccagg actggatccc ggcacacaga ccagctcaca ggagttcttg
1440
gttcccaacg atttgattgg ctgtgtgatc gggcgccagg cagcaagat cagcgagatc
1500
cggcagatgt cagggggcaca tatcaagatc gggaaccaag cagagggcgc tggggagcgg
1560
catgtcacca tcactggctc tccggtctcc atcgccctgg cccagtacct catcactgcc
1620
tgtctagaga cggccaagtc tacctctggg gggacgcctg gctcagcccc cgcagacctg
1680
cccacccctt tctcgccacc cctgacggcc ctgcccacag ctcccccagg cctgctgggc
1740
acaccttatg ccatctccct ctccaacttc atcggcctca gcctgtgcc cttcctggct
1800
ctaccacctg cttccccagg gccaccgccg ggcttggcgg cctacactgc caagatggca
1860
gcggccaatg ggagcaagaa agctgaacgg cagaaattct cccctactg aggccagctg
1920
aggtacaggc aggggcaggc aggaccacca gcaggggct gcctctgcac cctacccgcc
1980
caaggagact ccaccctggg gtcccaaacg ccgctaacgc ccagacgcat ggatgcaccc
2040
cctaccctgc ctccatctat gggagttctt tctctcagag tgggggcagt ttctggccca
2100
ggggtctgag ctgcggcagc cccagggcag ggggccctac ctcctcagct ctgtgcttgg
2160
atacagggag cagccaggag actccctagt gcccccacca tggcgggtgt cactcacgca
2220
ctccccatcc cttagggctt cctggcctac tgcatccttg tgggagtcag ggaggagggc
2280
ccgttgggta gctggggcca ggcttctctc cccaccacct gcagatttct tgctgcttcc
2340
actgataccc ttttgactgg aatgaactgg ctgggcttgt caggggcac cccaaagagg
2400
gggcactgcc aggtagctgg gggagtggca tggggcaggg gcccagttct cagcagcaga
2460
cactctgtac agttttttca atccctgttt ttgaataaat attctcagcg accaaaaaaa
2520
aaaaaaaaaa aaaaaaaaaa aaaacacaac aaaacttacc attcctcctt actcaaacac
2580
```

```
ccccccct
2588


<210> 4622
<211> 403
<212> PRT
<213> Homo sapiens


<400> 4622
Met Ser Gly Ser Asp Gly Gly Leu Glu Glu Glu Pro Glu Leu Ser Ile
1               5                   10                  15
Thr Leu Thr Leu Arg Met Leu Met His Gly Lys Glu Val Gly Ser Ile
            20                  25                  30
Ile Gly Lys Lys Gly Glu Thr Val Lys Arg Ile Arg Glu Gln Ser Ser
        35                  40                  45
Ala Arg Ile Thr Ile Ser Glu Gly Ser Cys Pro Glu Arg Ile Thr Thr
    50                  55                  60
Ile Thr Gly Ser Thr Ala Ala Val Phe His Ala Val Ser Met Ile Ala
65                  70                  75                  80
Phe Lys Leu Asp Glu Asp Leu Cys Ala Ala Pro Ala Asn Gly Gly Asn
                85                  90                  95
Val Ser Arg Pro Pro Val Thr Leu Arg Leu Val Ile Pro Ala Ser Gln
            100                 105                 110
Cys Gly Ser Leu Ile Gly Lys Ala Gly Thr Lys Ile Lys Glu Ile Arg
        115                 120                 125
Glu Thr Thr Gly Ala Gln Val Gln Val Ala Gly Asp Leu Leu Pro Asn
    130                 135                 140
Ser Thr Glu Arg Ala Val Thr Val Ser Gly Val Pro Asp Ala Ile Ile
145                 150                 155                 160
Leu Cys Val Arg Gln Ile Cys Ala Val Ile Leu Glu Ser Pro Pro Lys
                165                 170                 175
Gly Ala Thr Ile Pro Tyr His Pro Ser Leu Ser Leu Gly Thr Val Leu
            180                 185                 190
Leu Ser Ala Asn Gln Gly Phe Ser Val Gln Gly Gln Tyr Gly Ala Val
        195                 200                 205
Thr Pro Ala Glu Val Thr Lys Leu Gln Gln Leu Ser Ser His Ala Val
    210                 215                 220
Pro Phe Ala Thr Pro Ser Val Val Pro Gly Leu Asp Pro Gly Thr Gln
225                 230                 235                 240
Thr Ser Ser Gln Glu Phe Leu Val Pro Asn Asp Leu Ile Gly Cys Val
                245                 250                 255
Ile Gly Arg Gln Gly Ser Lys Ile Ser Glu Ile Arg Gln Met Ser Gly
            260                 265                 270
Ala His Ile Lys Ile Gly Asn Gln Ala Glu Gly Ala Gly Glu Arg His
        275                 280                 285
Val Thr Ile Thr Gly Ser Pro Val Ser Ile Ala Leu Ala Gln Tyr Leu
    290                 295                 300
Ile Thr Ala Cys Leu Glu Thr Ala Lys Ser Thr Ser Gly Gly Thr Pro
305                 310                 315                 320
Gly Ser Ala Pro Ala Asp Leu Pro Thr Pro Phe Ser Pro Pro Leu Thr
                325                 330                 335
Ala Leu Pro Thr Ala Pro Pro Gly Leu Leu Gly Thr Pro Tyr Ala Ile
            340                 345                 350
Ser Leu Ser Asn Phe Ile Gly Leu Lys Pro Val Pro Phe Leu Ala Leu
```

```
        355                 360                 365
Pro Pro Ala Ser Pro Gly Pro Pro Pro Gly Leu Ala Ala Tyr Thr Ala
    370                 375                 380
Lys Met Ala Ala Ala Asn Gly Ser Lys Lys Ala Glu Arg Gln Lys Phe
385                 390                 395                 400
Ser Pro Tyr
```

```
<210> 4623
<211> 2220
<212> DNA
<213> Homo sapiens

<400> 4623
ntgatcacca agacacacaa agtagacctt gggctcccag agaagaaaaa gaagaagaaa
60
gtggtcaaag aaccagagac tcgatactca gttttaaaca atgatgatta ctttgctgat
120
gtttctcctt taagagctac atccccctct aagagtgtgg cccatgggca ggcacctgag
180
atgcctctag tgaagaaaaa gaagaagaaa aagaagggtg tcagcaccct ttgcgaggag
240
catgtagaac ctgagaccac gctgcctgct agacggacag agaagtcacc cagcctcagg
300
aagcaggtgt ttggccactt ggagttcctc agtggggaaa agaaaaataa gaagtcacct
360
ctagccatgt cccatgcctc tggggtgaaa acctccccag accctagaca gggtgaggag
420
gaaaccagag ttggcaagaa gctcaaaaaa cacaagaagg aaaaaaaggg ggcccaggac
480
cccacagcct tctcggtcca ggacccttgg ttctgtgagg ccagggaggc cagggatgtt
540
ggggacactt gctcagtggg gaagaaggat gaggaacagg cagccttggg gcagaaacgg
600
aagcggaaga gccccagaga acacaatggg aaggtgaaga agaaaaaaaa aatccaccag
660
gagggagatg ccctcccagg ccactccaag ccctccaggt ccatggagag cagccctagg
720
aaaggaagta aaaagaagcc agtcaaagtt gaggctccgg aatacatccc cataagtgat
780
gaccctaagg cctccgcaaa gaaaaagatg aagtccaaaa agaaggtaga gcagccagtc
840
atcgaggagc cagctctgaa aaggaagaaa aagaagaaga ggaaagagag tggggtagca
900
ggagacccct ggaaggagga aacagacacg gacttagagg tggtgttgga aaaaaaaggc
960
aacatggatg aggcgcacat agaccaggtg aggcgaaagg ccttgcaaga agagatcgat
1020
cgcgagtcag gcaaaacgga agcttctgaa accaggaagt ggacgggaac ccagtttggc
1080
cagtgggata ctgctggttt tgagaacgag gaccaaaaac tgaaatttct cagacttatg
1140
ggtggcttca aaaacctgtc cccttcgttc agccgccccg ccagcacgat tgcaaggccc
1200
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aacatggccc tcggcaagaa ggcggctgac agcctgcagc agaatctgca gcgggactac
1260
gaccgggcca tgagctggaa gtacagccgg ggagccggcc tcggcttctc caccgccccc
1320
aacaagatct tttacattga caggaacgct tccaagtcag tcaagctgga agattaaact
1380
ctagagtttt gtccccccaa aactgccaca attgctttga ttattccatt tatgctggag
1440
attacaaatt tttttgtga aaaaatcaga tcttggtgag gacctcgagc agtaagatat
1500
aaataactcc cataagctta gcgttccagt aatggaacac taggcataaa tggtttattc
1560
agttgtgcaa atgaaagcca tctgacagtt ggctcacatt gaacacctgt ggagattaag
1620
gacgaggaca actatattga tgggcttgga tgaactgggg cagggcagct catatttcgg
1680
gagccaggag aacgagtgag tgctaaaacc tcctgttttc tgtgttaaac attccgtccc
1740
tgtttgagac atcagtatgt acagttaact tttgttgagt gtttagcagg tactagggac
1800
atactagtgt tttccttaat gtatttaatc ttcataatta tgaaatgggt gctattatta
1860
gccccatctt atagatgagg caactgaggt tcagggataa agtaataaaa ttgcctgggg
1920
tcacccagcc actaagtgca gggtgttgta cttttgtacc cgaagcccta agttcactat
1980
tcgccactct gaatgtcccc tttagggaat ttccaccaga atcctcgttg gggattgaaa
2040
tgtctttaga tggaggaaaa agttttatga caagtctgca tctctgataa aaagtggagt
2100
gaatgaggaa cggagaatcg caagctcctt ttccttcctt ttcctttccc ctgtcataga
2160
gcagctgtag gcagagaggt gtctgagttg ttaccaaaca catgtgactg agctgctgct
2220

<210> 4624
<211> 189
<212> PRT
<213> Homo sapiens

<400> 4624
Met Lys Ser Lys Lys Lys Val Glu Gln Pro Val Ile Glu Glu Pro Ala
1   5   10   15
Leu Lys Arg Lys Lys Lys Lys Arg Lys Glu Ser Gly Val Ala Gly
            20   25   30
Asp Pro Trp Lys Glu Glu Thr Asp Thr Asp Leu Glu Val Val Leu Glu
            35   40   45
Lys Lys Gly Asn Met Asp Glu Ala His Ile Asp Gln Val Arg Arg Lys
        50   55   60
Ala Leu Gln Glu Glu Ile Asp Arg Glu Ser Gly Lys Thr Glu Ala Ser
65   70   75   80
Glu Thr Arg Lys Trp Thr Gly Thr Gln Phe Gly Gln Trp Asp Thr Ala
                85   90   95
Gly Phe Glu Asn Glu Asp Gln Lys Leu Lys Phe Leu Arg Leu Met Gly

3823

```
                    100                 105                 110
         Gly Phe Lys Asn Leu Ser Pro Ser Phe Ser Arg Pro Ala Ser Thr Ile
                115                 120                 125
         Ala Arg Pro Asn Met Ala Leu Gly Lys Lys Ala Ala Asp Ser Leu Gln
            130                 135                 140
         Gln Asn Leu Gln Arg Asp Tyr Asp Arg Ala Met Ser Trp Lys Tyr Ser
         145                 150                 155                 160
         Arg Gly Ala Gly Leu Gly Phe Ser Thr Ala Pro Asn Lys Ile Phe Tyr
                            165                 170                 175
         Ile Asp Arg Asn Ala Ser Lys Ser Val Lys Leu Glu Asp
                        180                 185
```

```
<210> 4625
<211> 334
<212> DNA
<213> Homo sapiens


<400> 4625
cgggagcagc ggaagctgca ggagaaggag cagcagcggc ggctggagga catgcaggct
60
ctgcggcggg aggaggagcg gcggcaggcg gagcgcgagc aggaatacaa gcggaaacag
120
ctggaggagc agcggcagtc agaacgtctc cagaggcagc tgcagcagga gcatgcctac
180
ctaaagtccc tgcagcagca gcaacagcag cagcagcttc agaaacagca gcagcagcag
240
ctcctgcctg gggacaggaa gcccctgtac cattatgggc ggggcatgaa tcccgctgac
300
aaaccagcct gggcccgaga gggagaagag agac
334
```

```
<210> 4626
<211> 111
<212> PRT
<213> Homo sapiens


<400> 4626
         Arg Glu Gln Arg Lys Leu Gln Glu Lys Glu Gln Gln Arg Arg Leu Glu
         1               5                   10                  15
         Asp Met Gln Ala Leu Arg Arg Glu Glu Glu Arg Arg Gln Ala Glu Arg
                        20                  25                  30
         Glu Gln Glu Tyr Lys Arg Lys Gln Leu Glu Glu Gln Arg Gln Ser Glu
                    35                  40                  45
         Arg Leu Gln Arg Gln Leu Gln Gln Glu His Ala Tyr Leu Lys Ser Leu
                50                  55                  60
         Gln Gln Gln Gln Gln Gln Gln Gln Leu Gln Lys Gln Gln Gln Gln Gln
         65                  70                  75                  80
         Leu Leu Pro Gly Asp Arg Lys Pro Leu Tyr His Tyr Gly Arg Gly Met
                            85                  90                  95
         Asn Pro Ala Asp Lys Pro Ala Trp Ala Arg Glu Gly Glu Glu Arg
                        100                 105                 110
```

```
<210> 4627
<211> 1736
```

```
<212> DNA
<213> Homo sapiens

<400> 4627
nnagttgcct tgacctgcag ctccggcacc gcggacccgc cttctgccct cagcagcaga
60
cgctctgtcc cgcccgggca gctctgcgag gcagcggctg gagagggaac catggggact
120
gtgcacgccc ggagtttgga gcctcttcca tcaagtggac ctgattttgg aggattagga
180
gaagaagctg aatttgttga agttgagcct gaagctaaac aggaaattct tgaaaacaaa
240
gatgtggttg ttcaacatgt tcattttgat ggacttggaa ggactaaaga tgatatcatc
300
atttgtgaaa ttggagatgt tttcaaggcc aaaaacctaa ttgaggtaat gcggaaatct
360
catgaagccc gtgaaaaatt gctccgtctt ggaattttta dacaagtgga tgttttgatt
420
gacacatgtc aaggtgatgg cgcacttcca aatgggttag acgttacctt tgaagtaact
480
gaattgagga gattaacggg cagttataac accatggttg ggaacaatga aggcagtatg
540
gtacttggcc tcaagcttcc taatcttctt ggtcgtgcag aaaaggtgac ctttcagttt
600
tcctatggaa caaaagaaac ttcgtatggc ctgtccttct tcaaaccacg gcccggaaac
660
ttcgaaagaa atttctctgt aaacttatat aaagttactg gacagttccc ttggagctca
720
ctgcgggaga cggacagagg aatgtcagct gagtacagtt ttcccatatg gaagaccagc
780
cacactgtca agtgggaagg cgtatggcga gaactgggct gcctctcaag gacggcgtca
840
tttgctgttc gaaaagaaag cggacattca ctgaaatcat ctctttcgca cgccatggtc
900
atcgattctc ggaattcttc catcttacca aggagaggtg ctttgctgaa agttaaccag
960
gaactggcag gctacactgg cggggatgtg agcttcatca agaagatttt gaacttcag
1020
ttgaacaagc aactcatatt tgattcagtt ttttcagcgt ctttctgggg cggaatgttg
1080
gtacccattg gtgataagcc gtcaagcatt gctgataggt tttaccttgg gggacccaca
1140
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1200
ggagaagcgt actgggccgg cggcctgcac ctctacaccc cattaccttt ccggccaggc
1260
cagggtggct ttggagaact tttccgaaca cacttctttc tcaacgcagg aaacctctgc
1320
aacctcaact atggggaggg ccccaaagct catattcgta agctggctga gtgcatccgc
1380
tggtcgtacg gggccgggat tgtcctcagg cttggcaaca tcgctcggtt ggaacttaat
1440
tactgcgtcc ccatgggagt acagacaggc gacaggatat gtgatggcgt ccagtttgga
1500
```

3825

gctgggataa ggttcctgta gccgacaccc ctacaggaga agctctggga ctggggcagc
1560
agcaaggcgc ccatgccaca caccgtctct cgaggaaacg cggttcagcg attctttgac
1620
tgcggaccct gtgggaaacc ccgtcaataa atgttaaaga cacactcaaa aaaaaaaaaa
1680
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa
1736

<210> 4628
<211> 469
<212> PRT
<213> Homo sapiens

<400> 4628
Met Gly Thr Val His Ala Arg Ser Leu Glu Pro Leu Pro Ser Ser Gly
 1   5   10   15
Pro Asp Phe Gly Gly Leu Gly Glu Glu Ala Glu Phe Val Glu Val Glu
            20   25   30
Pro Glu Ala Lys Gln Glu Ile Leu Glu Asn Lys Asp Val Val Val Gln
            35   40   45
His Val His Phe Asp Gly Leu Gly Arg Thr Lys Asp Asp Ile Ile Ile
    50   55   60
Cys Glu Ile Gly Asp Val Phe Lys Ala Lys Asn Leu Ile Glu Val Met
65   70   75   80
Arg Lys Ser His Glu Ala Arg Glu Lys Leu Leu Arg Leu Gly Ile Phe
                85   90   95
Arg Gln Val Asp Val Leu Ile Asp Thr Cys Gln Gly Asp Gly Ala Leu
            100   105   110
Pro Asn Gly Leu Asp Val Thr Phe Glu Val Thr Glu Leu Arg Arg Leu
            115   120   125
Thr Gly Ser Tyr Asn Thr Met Val Gly Asn Asn Glu Gly Ser Met Val
    130   135   140
Leu Gly Leu Lys Leu Pro Asn Leu Leu Gly Arg Ala Glu Lys Val Thr
145   150   155   160
Phe Gln Phe Ser Tyr Gly Thr Lys Glu Thr Ser Tyr Gly Leu Ser Phe
                165   170   175
Phe Lys Pro Arg Pro Gly Asn Phe Glu Arg Asn Phe Ser Val Asn Leu
            180   185   190
Tyr Lys Val Thr Gly Gln Phe Pro Trp Ser Ser Leu Arg Glu Thr Asp
        195   200   205
Arg Gly Met Ser Ala Glu Tyr Ser Phe Pro Ile Trp Lys Thr Ser His
    210   215   220
Thr Val Lys Trp Glu Gly Val Trp Arg Glu Leu Gly Cys Leu Ser Arg
225   230   235   240
Thr Ala Ser Phe Ala Val Arg Lys Glu Ser Gly His Ser Leu Lys Ser
                245   250   255
Ser Leu Ser His Ala Met Val Ile Asp Ser Arg Asn Ser Ser Ile Leu
            260   265   270
Pro Arg Arg Gly Ala Leu Leu Lys Val Asn Gln Glu Leu Ala Gly Tyr
        275   280   285
Thr Gly Gly Asp Val Ser Phe Ile Lys Glu Asp Phe Glu Leu Gln Leu
    290   295   300
Asn Lys Gln Leu Ile Phe Asp Ser Val Phe Ser Ala Ser Phe Trp Gly

```
305                    310                    315                    320
Gly Met Leu Val Pro Ile Gly Asp Lys Pro Ser Ser Ile Ala Asp Arg
                325                    330                    335
Phe Tyr Leu Gly Gly Pro Thr Ser Val Arg Gly Phe Ser Met His Ser
                340                    345                    350
Ile Gly Pro Gln Ser Glu Gly Asp Tyr Leu Gly Gly Glu Ala Tyr Trp
                355                    360                    365
Ala Gly Gly Leu His Leu Tyr Thr Pro Leu Pro Phe Arg Pro Gly Gln
        370                    375                    380
Gly Gly Phe Gly Glu Leu Phe Arg Thr His Phe Phe Leu Asn Ala Gly
385                    390                    395                    400
Asn Leu Cys Asn Leu Asn Tyr Gly Glu Gly Pro Lys Ala His Ile Arg
                405                    410                    415
Lys Leu Ala Glu Cys Ile Arg Trp Ser Tyr Gly Ala Gly Ile Val Leu
                420                    425                    430
Arg Leu Gly Asn Ile Ala Arg Leu Glu Leu Asn Tyr Cys Val Pro Met
                435                    440                    445
Gly Val Gln Thr Gly Asp Arg Ile Cys Asp Gly Val Gln Phe Gly Ala
        450                    455                    460
Gly Ile Arg Phe Leu
465


<210> 4629
<211> 706
<212> DNA
<213> Homo sapiens

<400> 4629
acgcgtgggc cggagaccca gcgtgggggg cgcagaggga gtccccctga gctgggcgcg
60
tcctcccgcg gcggtccgct ccttaagtcc cctgtgcgtc acctccttgc gtcggtcgcc
120
agcacccgca ttgcttcggc cctagtgcag gggcagcacg tgcgcactga accctggagt
180
cctgatctct agcctagctc aaagcctcca ccaggatcgg gtggcagctt ccatttgagg
240
ccatttctag gccagcggcc cagctgccag cttcacgtct cctgagttgg gggatctctg
300
gtcccctgtc ctgctttgtg gccaagggag cccaggatcc tggccagagg atgggcccgc
360
accccactcc tggttctggg tgcagttcgg cagatgggaa tccaggagct cagcttggac
420
accctcccca cctccggctc caagcccggt tccaagagga cccagggctg agcagaggct
480
tgtccccaat atcctcccct gcccctcatc tttcctattt gagggaagac tgacaccctc
540
aaagcccagc tggaggcatc tctgcccatt ctgcttagac ttagcgcacc ctggtctctg
600
ctcgaggaat ctgccctcag ctccccccat tctgggggtc cacccaacac ccacacacac
660
ttccacggac caccctctct ctccctattg accatgccct cctctc
706


<210> 4630
```

<211> 140
<212> PRT
<213> Homo sapiens

<400> 4630
Met Val Asn Arg Glu Arg Glu Gly Gly Pro Trp Lys Cys Val Trp Val
1   5   10   15
Leu Gly Gly Pro Pro Glu Trp Gly Glu Leu Arg Ala Asp Ser Ser Ser
            20   25   30
Arg Asp Gln Gly Ala Leu Ser Leu Ser Arg Met Gly Arg Asp Ala Ser
        35   40   45
Ser Trp Ala Leu Arg Val Ser Val Phe Pro Gln Ile Gly Lys Met Arg
    50   55   60
Gly Arg Gly Gly Tyr Trp Gly Gln Ala Ser Ala Gln Pro Trp Val Leu
65   70   75   80
Leu Glu Pro Gly Leu Glu Pro Glu Val Gly Arg Val Ser Lys Leu Ser
                85   90   95
Ser Trp Ile Pro Ile Cys Arg Thr Ala Pro Arg Thr Arg Ser Gly Val
            100   105   110
Arg Ala His Pro Leu Ala Arg Ile Leu Gly Ser Leu Gly His Lys Ala
        115   120   125
Gly Gln Gly Thr Arg Asp Pro Pro Thr Gln Glu Thr
    130   135   140

<210> 4631
<211> 2756
<212> DNA
<213> Homo sapiens

<400> 4631
cggccgccgg agcgctttgg gaaggcgcac ggggcgaaga tggcggcgga gcgacaggag
60
gcgctgaggg agttcgtggc ggtgacgggc gccgaggagg accgggcccg cttctttctc
120
gagtcggccg gctgggactt gcagatcgcg ctagcgagct tttatgagga cggaggggat
180
gaagacattg tgaccatttc gcaggcaacc cccagttcag tgtccagagg cacagccccc
240
agtgataata gagtgacatc cttcagagac ctcattcatg accaagatga agatgaggag
300
gaagaggaag gccagaggag caggttttat gctgggggct cagagagaag tggacagcag
360
attgttggcc ctcccaggaa gaaaagtccc aacgagctgg tggatgatct ctttaaaggt
420
gccaaagagc atggagctgt agctgtggag cgagtgacca gagccctgg agagaccagt
480
aaaccgagac catttgcagg aggtggctac cgccttgggg cagcaccaga ggaagagtct
540
gcctatgtgg caggagaaaa gaggcagcat tccagccaag atgttcatgt agtattgaaa
600
ctctggaaga gtggattcag cctggataat ggagaactca gaagctacca gacccatcc
660
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720

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2280
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2340
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2460

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2520

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2580

gcttttgatc ccaaagttcc cacaccggca gtggcctgct ggggcaatgg catctgtcac
2640

ggtgttttct ccagcaggtg gagattatgg aacctacata tgggtctgga aaaactgtac
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2756

<210> 4632
<211> 372
<212> PRT
<213> Homo sapiens

<400> 4632
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Gly Ala Glu Glu Asp Arg Ala Arg Phe Phe Leu Glu Ser Ala Gly Trp
                20   25   30
Asp Leu Gln Ile Ala Leu Ala Ser Phe Tyr Glu Asp Gly Gly Asp Glu
                35   40   45
Asp Ile Val Thr Ile Ser Gln Ala Thr Pro Ser Ser Val Ser Arg Gly
        50   55   60
Thr Ala Pro Ser Asp Asn Arg Val Thr Ser Phe Arg Asp Leu Ile His
65   70   75   80
Asp Gln Asp Glu Asp Glu Glu Glu Glu Gly Gln Arg Ser Arg Phe
                85   90   95
Tyr Ala Gly Gly Ser Glu Arg Ser Gly Gln Gln Ile Val Gly Pro Pro
                100   105   110
Arg Lys Lys Ser Pro Asn Glu Leu Val Asp Asp Leu Phe Lys Gly Ala
            115   120   125
Lys Glu His Gly Ala Val Ala Val Glu Arg Val Thr Lys Ser Pro Gly
        130   1⁚⁚   140
Glu Thr Ser Lys Pro Arg Pro Phe Ala Gly Gly Gly Tyr Arg Leu Gly
145   150   155   160
Ala Ala Pro Glu Glu Glu Ser Ala Tyr Val Ala Gly Glu Lys Arg Gln
                165   170   175
His Ser Ser Gln Asp Val His Val Val Leu Lys Leu Trp Lys Ser Gly
            180   185   190
Phe Ser Leu Asp Asn Gly Glu Leu Arg Ser Tyr Gln Asp Pro Ser Asn
            195   200   205
Ala Gln Phe Leu Glu Ser Ile Arg Arg Gly Glu Val Pro Ala Glu Leu
        210   215   220
Arg Arg Leu Ala His Gly Gly Gln Val Asn Leu Asp Met Glu Asp His
225   230   235   240
Arg Asp Glu Asp Phe Val Lys Pro Lys Gly Ala Phe Lys Ala Phe Thr
                245   250   255
Gly Glu Gly Gln Lys Leu Gly Ser Thr Ala Pro Gln Val Leu Ser Thr

3830

```
               260                    265                    270
Ser Ser Pro Ala Gln Gln Ala Glu Asn Glu Ala Lys Ala Ser Ser Ser
               275                    280                    285
Ile Leu Ile Asp Glu Ser Glu Pro Thr Thr Asn Ile Gln Ile Arg Leu
               290                    295                    300
Ala Asp Gly Gly Arg Leu Val Gln Lys Phe Asn His Ser His Arg Ile
305                    310                    315                    320
Ser Asp Ile Arg Leu Phe Ile Val Asp Ala Arg Pro Ala Met Ala Ala
                    325                    330                    335
Thr Ser Phe Ile Leu Met Thr Thr Phe Pro Asn Lys Glu Leu Ala Asp
               340                    345                    350
Glu Ser Gln Thr Leu Lys Glu Ala Asn Leu Leu Asn Ala Val Ile Val
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Gln Arg Leu Thr
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<210> 4633
<211> 873
<212> DNA
<213> Homo sapiens

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120
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180
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240
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300
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360
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420
atgcatcagg agcagccgat ccaggtatgt gatggcaaag ggagacagag acttgatgcc
480
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600
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660
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720
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780
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840
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873

<210> 4634
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<211> 242
<212> PRT
<213> Homo sapiens

<400> 4634
Met Leu Gln Glu Leu Asp Lys Thr Pro Gly Glu Ser Leu His Gly Tyr
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Arg Ile Cys Ile Gln Ala Ile Leu Gln Asp Lys Pro Lys Ile Ala Thr
            20                  25                  30
Ala Asn Leu Gly Lys Phe Leu Glu Leu Leu Arg Ser His Gln Ser Arg
        35                  40                  45
Pro Ala Lys Cys Leu Thr Ile Met Trp Ala Leu Gly Gln Ala Gly Phe
    50                  55                  60
Ala Asn Leu Thr Glu Gly Leu Lys Val Trp Leu Gly Ile Met Leu Pro
65                  70                  75                  80
Val Leu Gly Ile Lys Ser Leu Ser Pro Phe Ala Ile Thr Tyr Leu Asp
                85                  90                  95
Arg Leu Leu Leu Met His Pro Asn Leu Thr Lys Gly Phe Gly Met Ile
            100                 105                 110
Gly Pro Lys Asp Phe Phe Pro Leu Leu Asp Phe Ala Tyr Met Pro Asn
            115                 120                 125
Asn Ser Leu Thr Pro Ser Leu Gln Glu Gln Leu Cys Gln Leu Tyr Pro
        130                 135                 140
Arg Leu Lys Val Leu Ala Phe Gly Ala Lys Pro Asp Ser Thr Leu His
145                 150                 155                 160
Thr Tyr Phe Pro Ser Phe Leu Ser Arg Ala Thr Pro Ser Cys Pro Pro
                165                 170                 175
Glu Met Lys Lys Glu Leu Leu Ser Ser Leu Thr Glu Cys Leu Thr Val
                180                 185                 190
Asp Pro Leu Ser Ala Ser Val Trp Arg Gln Leu Tyr Pro Lys His Leu
            195                 200                 205
Ser Gln Ser Ser Leu Leu Leu Glu His Leu Leu Ser Ser Trp Glu Gln
        210                 215                 220
Ile Pro Lys Lys Val Gln Lys Ser Leu Gln Glu Thr Ile Gln Ser Leu
225                 230                 235                 240
Lys Leu


<210> 4635
<211> 384
<212> DNA
<213> Homo sapiens

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120
agtggggccc gaggaggaag gccggtggtg tgtgggcaga gccagccagt ggtggccttc
180
ctcctcccga agatgagttt tgtagcccag gtgtttgcac actcacactt gctcactccc
240
tcacacacaa aaccctcact ctttgctttt tctggggaga gggaggccac tggcagaagc
300
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3832

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360
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384

<210> 4636
<211> 108
<212> PRT
<213> Homo sapiens

<400> 4636
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Thr Arg Val Leu Gly Gln Pro Arg Lys Leu Phe Ser Ile Gly Trp Gly
                20   25   30
Lys Glu Val Lys Trp Gly Pro Arg Arg Lys Ala Gly Gly Val Trp Ala
            35   40   45
Glu Pro Ala Ser Gly Gly Leu Pro Pro Glu Asp Glu Phe Cys Ser
        50   55   60
Pro Gly Val Cys Thr Leu Thr Leu Ala His Ser Leu Thr His Lys Thr
65   70   75   80
Leu Thr Leu Cys Phe Phe Trp Gly Glu Gly Gly His Trp Gln Lys Arg
                85   90   95
Leu Pro Trp Pro Gln Ser Val Pro Ile Leu Ile Phe
                100   105

<210> 4637
<211> 2162
<212> DNA
<213> Homo sapiens

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120
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180
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240
ccggacgtct acatcgtgga gcgcctcttc tccagcagcc tggtggtggt agtcagtcac
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360
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480
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540
gcctatcctg gaagcctgac ttcaggggag attgtgcttt atgatggaaa ctccctgaaa
600
acagtctgca ctattgctgc ccatgaggga acactagctg ccatcacctt caatgcctca
660

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780
ctagtgttca gtatggattc acaattcctc tgcgcctcca gtaacaccga gacggtacac
840
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900
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1020
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1080
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1200
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1260
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1980
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2162
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<210> 4638

3834

<211> 446
<212> PRT
<213> Homo sapiens

<400> 4638

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		20					25					30			
Thr	Lys	Ala	Gly	Tyr	Lys	Leu	Phe	Ser	Leu	Ser	Ser	Val	Glu	Gln	Leu
	35					40					45				
Asp	Gln	Val	His	Gly	Ser	Asn	Glu	Ile	Pro	Asp	Val	Tyr	Ile	Val	Glu
	50				55					60					
Arg	Leu	Phe	Ser	Ser	Ser	Leu	Val	Val	Val	Val	Ser	His	Thr	Lys	Pro
65					70					75					80
Arg	Gln	Met	Asn	Val	Tyr	His	Phe	Lys	Lys	Gly	Thr	Glu	Ile	Cys	Asn
			85					90					95		
Tyr	Ser	Tyr	Ser	Ser	Asn	Ile	Leu	Ser	Ile	Arg	Leu	Asn	Arg	Gln	Arg
		100					105					110			
Leu	Leu	Val	Cys	Leu	Glu	Glu	Ser	Ile	Tyr	Ile	His	Asn	Ile	Lys	Asp
		115					120					125			
Met	Lys	Leu	Leu	Lys	Thr	Leu	Leu	Asp	Ile	Pro	Ala	Asn	Pro	Thr	Gly
	130					135					140				
Leu	Cys	Ala	Leu	Ser	Ile	Asn	His	Ser	Asn	Ser	Tyr	Leu	Ala	Tyr	Pro
145					150					155					160
Gly	Ser	Leu	Thr	Ser	Gly	Glu	Ile	Val	Leu	Tyr	Asp	Gly	Asn	Ser	Leu
				165					170					175	
Lys	Thr	Val	Cys	Thr	Ile	Ala	Ala	His	Glu	Gly	Thr	Leu	Ala	Ala	Ile
			180					185					190		
Thr	Phe	Asn	Ala	Ser	Gly	Ser	Lys	Leu	Ala	Ser	Ala	Ser	Glu	Lys	Gly
		195					200					205			
Thr	Val	Ile	Arg	Val	Phe	Ser	Val	Pro	Asp	Gly	Gln	Lys	Leu	Tyr	Glu
		210					215					220			
Phe	Arg	Arg	Gly	Met	Lys	Arg	Tyr	Val	Thr	Ile	Ser	Ser	Leu	Val	Phe
225					230					235					240
Ser	Met	Asp	Ser	Gln	Phe	Leu	Cys	Ala	Ser	Ser	Asn	Thr	Glu	Thr	Val
			245					250					255		
His	Ile	Phe	Lys	Leu	Glu	Gln	Val	Thr	Asn	Ser	Arg	Pro	Glu	Glu	Pro
			260					265					270		
Ser	Thr	Trp	Ser	Gly	Tyr	Met	Gly	Lys	Met	Phe	Met	Ala	Ala	Thr	Asn
		275					280					285			
Tyr	Leu	Pro	Thr	Gln	Val	Ser	Asp	Met	Met	His	Gln	Asp	Arg	Ala	Phe
	290					295					300				
Ala	Thr	Ala	Arg	Leu	Asn	Phe	Ser	Gly	Gln	Arg	Asn	Ile	Cys	Thr	Leu
305					310					315					320
Ser	Thr	Ile	Gln	Lys	Leu	Pro	Arg	Leu	Leu	Val	Ala	Ser	Ser	Ser	Gly
				325					330					335	
His	Leu	Tyr	Met	Tyr	Asn	Leu	Asp	Pro	Gln	Asp	Gly	Gly	Glu	Cys	Val
			340					345					350		
Leu	Ile	Lys	Thr	His	Ser	Leu	Leu	Gly	Ser	Gly	Thr	Thr	Glu	Glu	Asn
		355					360					365			
Lys	Glu	Asn	Asp	Leu	Arg	Pro	Ser	Leu	Pro	Gln	Ser	Tyr	Ala	Ala	Thr
	370					375					380				
Val	Ala	Arg	Pro	Ser	Ala	Ser	Ser	Ala	Ser	Thr	Val	Pro	Gly	Tyr	Ser

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385                      390                      395                      400
Glu Asp Gly Gly Ala Leu Arg Gly Glu Val Ile Pro Glu His Glu Phe
                    405                      410                      415
Ala Thr Gly Pro Val Cys Leu Asp Asp Glu Asn Glu Phe Pro Pro Ile
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Ile Leu Cys Arg Gly Asn Gln Lys Gly Lys Thr Lys Gln Ser
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<210> 4639
<211> 1007
<212> DNA
<213> Homo sapiens

<400> 4639
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120
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180
cccactagat cccacaaagg gcaaactcaa agatgaaaca aaggcaacgc catcaataac
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420
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480
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540
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600
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720
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atagacccat gccctctgca gaagggctga ggtttaggca aggccaattc cttcccctgt
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1007

<210> 4640
<211> 71
<212> PRT
<213> Homo sapiens

3836

<400> 4640
Met Asn Thr Ile Gly Phe His Lys Ser Phe Cys Cys Cys Leu Asp Ser
1   5   10   15
Pro Cys Phe Phe Leu Glu Arg Asn Ile Pro Asn Phe Leu Leu Leu Leu
            20   25   30
Leu Arg Arg Ser Phe Ala Leu Val Ala Gln Ala Arg Val Gln Trp Arg
        35   40   45
Asp Leu Ser Ser Leu Gln Pro Pro Pro Pro Arg Leu Lys Arg Phe Ser
    50   55   60
His Leu Ser Leu Pro Ser Ser
65   70

<210> 4641
<211> 1873
<212> DNA
<213> Homo sapiens

<400> 4641
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420
gcgcgtttca tctgccccgt tgtgggcctg gagatgaacg gccgacacag gttctgcttc
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1080

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tgttctctct atagttctgt gtcataaagc tgtcctggcc agccttcaag ctggtgtggc
1140
cactcttgat gtgaggcgtg tcggttccag gggggacatg ggaggggctg cacagtggcc
1200
cgaggtcatg cttgcttcca cctgcaggtg catttggtcc tttccatggc caggaagccc
1260
tgtgggctgc actttttatg cttgcagtaa caagagactc cagagtcctc accggtgcag
1320
agttggcaca tattaattaa ctaaaattct aatgatcttg ctaccagcaa taaatcaagt
1380
aggccaagtg aaactgggct ttaaaaagga tggatttcaa atacactgtg cccactagaa
1440
gcttcgaagg gcctcgtccc tctgctacag ccctgggagg agccaggatc cttgttggtc
1500
tagctaaata ctgttagggg agtgtgcccc atctcatcat ttcgaagata gcagagtcat
1560
agttgggcac ccggtgattg ggttcaaaaa taaagctggt ctgcctcttc aaaaaaaaaa
1620
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa tttttttttt
1680
ggccccccccc aaaaaaaccc cccacccccc ccgcggcggg gtgttttttt ccccgcggcc
1740
gaccccccctc cccccccggg ggggcgcggg ttggggggcc ccccccggc cccccgtgt
1800
ggggggggtgg ggggttgttt ttttttttttg ttgaagtgtt tttcccaaaa aaaacaaaaa
1860
aaaaaagaga ggg
1873


<210> 4642
<211> 306
<212> PRT
<213> Homo sapiens

<400> 4642
Met Gly Cys Asp Gly Gly Thr Ile Pro Lys Arg His Glu Leu Val Lys
1               5                   10                  15
Gly Pro Lys Lys Val Glu Lys Val Asp Lys Asp Ala Glu Leu Val Ala
                20                  25                  30
Gln Trp Asn Tyr Cys Thr Leu Ser Gln Glu Ile Leu Arg Arg Pro Ile
                35                  40                  45
Val Ala Cys Glu Leu Gly Arg Leu Tyr Asn Lys Asp Ala Val Ile Glu
            50                  55                  60
Phe Leu Leu Asp Lys Ser Ala Glu Lys Ala Leu Gly Lys Ala Ala Ser
65                  70                  75                  80
His Ile Lys Ser Ile Lys Asn Val Thr Glu Leu Lys Leu Ser Asp Asn
                85                  90                  95
Pro Ala Trp Glu Gly Asp Lys Gly Asn Thr Lys Gly Asp Lys His Asp
                100                 105                 110
Asp Leu Gln Arg Ala Arg Phe Ile Cys Pro Val Val Gly Leu Glu Met
            115                 120                 125
Asn Gly Arg His Arg Phe Cys Phe Leu Arg Cys Cys Gly Cys Val Phe
            130                 135                 140
Ser Glu Arg Ala Leu Lys Glu Ile Lys Ala Glu Val Cys His Thr Cys
```

3838

```
145                    150                    155                    160
Gly Ala Ala Phe Gln Glu Asp Asp Val Ile Met Leu Asn Gly Thr Lys
                165                    170                    175
Glu Asp Val Asp Val Leu Lys Thr Arg Met Glu Glu Arg Arg Leu Arg
                180                    185                    190
Ala Lys Leu Glu Lys Lys Thr Lys Lys Pro Lys Ala Ala Glu Ser Val
                195                    200                    205
Ser Lys Pro Asp Val Ser Glu Glu Ala Pro Gly Pro Ser Lys Val Lys
        210                    215                    220
Thr Gly Lys Pro Glu Glu Ala Ser Leu Asp Ser Arg Glu Lys Lys Thr
225                    230                    235                    240
Asn Leu Ala Pro Lys Ser Thr Ala Met Asn Glu Ser Ser Ser Gly Lys
                245                    250                    255
Ala Gly Lys Pro Pro Cys Gly Ala Thr Lys Arg Ser Ile Ala Asp Ser
                260                    265                    270
Glu Glu Ser Glu Ala Tyr Lys Ser Leu Phe Thr Thr His Ser Ser Ala
        275                    280                    285
Lys Arg Ser Lys Glu Glu Ser Ala His Trp Val Thr His Thr Ser Tyr
        290                    295                    300
Cys Phe
305
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<210> 4643
<211> 1125
<212> DNA
<213> Homo sapiens

<400> 4643
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tttggaggtg aaagaggccc agagtagaga gagagagaga ccgacgtaca cgggatggct
120
acgggaacgc gctatgccgg gaaggtggtg gtcgtgaccg ggggcgggcg cggcatcgga
180
gctgggatcg tgcgcgcctt cgtggacagc ggggcccgag tggttatctg cgacaaggat
240
gagtctgggg gccgggccct ggagcaggag ctccctggag ctgtctttat cctctgtgat
300
gtgactcagg aagatgatat gaagaccctg gtttctgaga ccatccgccg atttggccgc
360
ctggattgtg ttgtcaacaa cgctggccac cacccacccc cacagaggcc tgaggagacc
420
tctgcccagg gattccgcca gctgctggag ctgaacctac tggggacgta caccttgacc
480
aagctcgccc tcccctacct gcggaagagt caagggaatg tcatcaacat ctccagcctg
540
gtggggcaa tcggccaggc ccaggcagtt ccctatgtgg ccaccaaggg ggcagtaaca
600
gccatgacca aagctttggc cctggatgaa agtccatatg gtgtccgagt caactgtatc
660
tccccaggaa acatctggac cccgctgtgg gaggagctgg cagccttaat gccagaccct
720
agggccacaa tccgagaggg catgctggcc cagccactgg ccgcatgggc cagcccgct
780
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gaggtcgggg ctgcggcagt gttcctggcc tccgaagcca acttctgcac gggcattgaa
840
ctgctcgtga cggggggtgc agagctgggg tacgggtgca aggccagtcg gagcaccccc
900
gtggacgccc ccgatatccc ttcctgattt ctctcatttc tacttggggc cccctcccta
960
ggactctccc accccaaact ccaacctgta tcagatgcag cccccaagcc cttagactct
1020
aagcccagtt agcaaggtgc cgggtcaccc tgcaggttcc cataaaaacg atttgcagcc
1080
agaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa
1125

<210> 4644
<211> 270
<212> PRT
<213> Homo sapiens

<400> 4644
Met Ala Thr Gly Thr Arg Tyr Ala Gly Lys Val Val Val Val Thr Gly
1   5   10   15
Gly Gly Arg Gly Ile Gly Ala Gly Ile Val Arg Ala Phe Val Asp Ser
            20   25   30
Gly Ala Arg Val Val Ile Cys Asp Lys Asp Glu Ser Gly Gly Arg Ala
            35   40   45
Leu Glu Gln Glu Leu Pro Gly Ala Val Phe Ile Leu Cys Asp Val Thr
        50   55   60
Gln Glu Asp Asp Met Lys Thr Leu Val Ser Glu Thr Ile Arg Arg Phe
65   70   75   80
Gly Arg Leu Asp Cys Val Val Asn Asn Ala Gly His His Pro Pro Pro
                85   90   95
Gln Arg Pro Glu Glu Thr Ser Ala Gln Gly Phe Arg Gln Leu Leu Glu
            100   105   110
Leu Asn Leu Leu Gly Thr Tyr Thr Leu Thr Lys Leu Ala Leu Pro Tyr
        115   120   125
Leu Arg Lys Ser Gln Gly Asn Val Ile Asn Ile Ser Ser Leu Val Gly
        130   135   140
Ala Ile Gly Gln Ala Gln Ala Val Pro Tyr Val Ala Thr Lys Gly Ala
145   150   155   160
Val Thr Ala Met Thr Lys Ala Leu Ala Leu Asp Glu Ser Pro Tyr Gly
                165   170   175
Val Arg Val Asn Cys Ile Ser Pro Gly Asn Ile Trp Thr Pro Leu Trp
                180   185   190
Glu Glu Leu Ala Ala Leu Met Pro Asp Pro Arg Ala Thr Ile Arg Glu
            195   200   205
Gly Met Leu Ala Gln Pro Leu Gly Arg Met Gly Gln Pro Ala Glu Val
        210   215   220
Gly Ala Ala Ala Val Phe Leu Ala Ser Glu Ala Asn Phe Cys Thr Gly
225   230   235   240
Ile Glu Leu Leu Val Thr Gly Gly Ala Glu Leu Gly Tyr Gly Cys Lys
                245   250   255
Ala Ser Arg Ser Thr Pro Val Asp Ala Pro Asp Ile Pro Ser
            260   265   270

3840

<210> 4645
<211> 1725
<212> DNA
<213> Homo sapiens

<400> 4645
nggctctcgc ctaccggggg cttctctcac cgggactcgg gactcccggg aagtggaccg
60
gcagaagagg gggctagcta gctgtctctg cggaccaggg agaccccgc gccccccgg
120
tgtgaggcgg cctcacaggg ccgggtgggc tggcgagccg acgcggcggc ggaggaggct
180
gtgaggagtg tgtggaacag gacccgggac agaggaacca tggctccgca gaacctgagc
240
accttttgcc tgttgctgct atacctcatc ggggcggtga ttgccggacg agatttctat
300
aagatcttgg gggtgcctcg aagtgcctct ataaaggata ttaaaaaggc ctataggaaa
360
ctagccctgc agcttcatcc cgaccggaac cctgatgatc cacaagccca ggagaaattc
420
caggatctgg gtgctgctta tgaggttctg tcagatagtg agaaacggaa acagtacgat
480
acttatggtg aagaaggatt aaaagatggt catcagagct cccatggaga catttttca
540
cacttctttg gggatttgg tttcatgttt ggaggaaccc ctcgtcagca agacagaaat
600
attccaagag gaagtgatat tattgtagat ctagaagtca ctttggaaga agtatatgca
660
ggaaattttg tggaagtagt tagaaacaaa cctgtggcaa ggcaggctcc tggcaaacgg
720
aagtgcaatt gtcggcaaga gatgcggacc acccagctgg ccctgggcg cttccaaatg
780
acccaggagg tggtctgcga cgaatgccct aatgtcaaac tagtgaatga agaacgaacg
840
ctggaagtag aaatagagcc tggggtgaga gacggcatgg agtaccctt tattggagaa
900
ggtgagcctc acgtggatgg ggagcctgga gatttacggt tccgaatcaa agttgtcaag
960
cacccaatat ttgaaaggag aggagatgat ttgtacacaa atgtgacaat ctcattagtt
1020
gagtcactgg ttggctttga gatggatatt actcacttgg atggtcacaa ggtacatatt
1080
tcccgggata agatcaccag gccaggagcg aagctatgga agaaggggga agggctcccc
1140
aactttgaca acaacaatat caagggctct ttgataatca cttttgatgt ggatttccca
1200
aaagaacagt aacagagga agcgagagaa ggtatcaaac agctactgaa acaagggtca
1260
gtgcagaagg tatacaatgg actgcaagga tattgagagt gaataaaatt ggactttgtt
1320
taaaataagt gaataagcga tatttattat ctgcaaggtt ttttgtgtg tgtttttgtt
1380
tttattttca atatgcaagt taggcttaat tttttatct aatgatcatc atgaaatgaa
1440

taagagggct taagaatttg tccatttgca ttcggaaaag aatgaccagc aaaaggttta
1500
ctaataccbc tcccttgggg gatttaatgt ctggtgctgc cgcctgagtt tcaagaatta
1560
aagctgcaag aggactccag gagcaaaaga aacacaatat agagggttgg agttgttagc
1620
aatttcattc aaaatgccaa ctggagaagt ctgtttttaa atacattttg ttgttatttt
1680
taaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa
1725

<210> 4646
<211> 358
<212> PRT
<213> Homo sapiens

<400> 4646
Met Ala Pro Gln Asn Leu Ser Thr Phe Cys Leu Leu Leu Leu Tyr Leu
 1   5   10   15
Ile Gly Ala Val Ile Ala Gly Arg Asp Phe Tyr Lys Ile Leu Gly Val
             20   25   30
Pro Arg Ser Ala Ser Ile Lys Asp Ile Lys Lys Ala Tyr Arg Lys Leu
         35   40   45
Ala Leu Gln Leu His Pro Asp Arg Asn Pro Asp Asp Pro Gln Ala Gln
     50   55   60
Glu Lys Phe Gln Asp Leu Gly Ala Ala Tyr Glu Val Leu Ser Asp Ser
65   70   75   80
Glu Lys Arg Lys Gln Tyr Asp Thr Tyr Gly Glu Glu Gly Leu Lys Asp
             85   90   95
Gly His Gln Ser Ser His Gly Asp Ile Phe Ser His Phe Phe Gly Asp
            100   105   110
Phe Gly Phe Met Phe Gly Gly Thr Pro Arg Gln Gln Asp Arg Asn Ile
            115   120   125
Pro Arg Gly Ser Asp Ile Ile Val Asp Leu Glu Val Thr Leu Glu Glu
        130   135   140
Val Tyr Ala Gly Asn Phe Val Glu Val Val Arg Asn Lys Pro Val Ala
145   150   155   160
Arg Gln Ala Pro Gly Lys Arg Lys Cys Asn Cys Arg Gln Glu Met Arg
                165   170   175
Thr Thr Gln Leu Gly Pro Gly Arg Phe Gln Met Thr Gln Glu Val Val
            180   185   190
Cys Asp Glu Cys Pro Asn Val Lys Leu Val Asn Glu Glu Arg Thr Leu
            195   200   205
Glu Val Glu Ile Glu Pro Gly Val Arg Asp Gly Met Glu Tyr Pro Phe
        210   215   220
Ile Gly Glu Gly Glu Pro His Val Asp Gly Glu Pro Gly Asp Leu Arg
225   230   235   240
Phe Arg Ile Lys Val Val Lys His Pro Ile Phe Glu Arg Arg Gly Asp
                245   250   255
Asp Leu Tyr Thr Asn Val Thr Ile Ser Leu Val Glu Ser Leu Val Gly
            260   265   270
Phe Glu Met Asp Ile Thr His Leu Asp Gly His Lys Val His Ile Ser
            275   280   285
Arg Asp Lys Ile Thr Arg Pro Gly Ala Lys Leu Trp Lys Lys Gly Glu

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           290                    295                    300
       Gly Leu Pro Asn Phe Asp Asn Asn Asn Ile Lys Gly Ser Leu Ile Ile
       305                    310                    315                    320
       Thr Phe Asp Val Asp Phe Pro Lys Glu Gln Leu Thr Glu Glu Ala Arg
                           325                    330                    335
       Glu Gly Ile Lys Gln Leu Leu Lys Gln Gly Ser Val Gln Lys Val Tyr
                           340                    345                    350
       Asn Gly Leu Gln Gly Tyr
               355
```

<210> 4647
<211> 791
<212> DNA
<213> Homo sapiens

<400> 4647
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120
gatcccctg gaggaggcac cagcatcacc aagtaggtgc cacaggtata tatgggtgtc
180
ttccgcagca tttttagagg cagcccacag ctagtatttg ctgcttgatc ctctttcagt
240
gtgttggaga tggtggaacc agtcagggca gcaagcgttg ctgacgggga ggctctatac
300
cgagaaagtc tacttagaag catctcatta atgcttttgg cagattcgcc ctcttttctc
360
attagaattg tacgttcctg aagtgggttg gctacaaata caccattttc aaccacaagt
420
tcaaaaatgt ccatgaagac agaatgtccc ttcggtgttt tctcattcag ctggcagga
480
gaccagatcc aatagaagta agtgccatct gaagacaggt gcacagtgct catggtgctg
540
ccaatgggga ggtgattggc tggcattggc accacctggc acacctgaag ggtgttctgg
600
tcaatgacct ggaaaaggga gtgaggttta ttatcgaaag agacaggccg gtggagaaga
660
ctgccgctgc caaaagccac ccatcctggt tccaactcct cgttccggca gtacacaaaa
720
cctctgagag taccatgtaa tccagatccc aatttgctta ctcctcttcc aactgagtta
780
gtagtataca g
791
```

<210> 4648
<211> 188
<212> PRT
<213> Homo sapiens

<400> 4648
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       Met Pro Ala Asn His Leu Pro Ile Gly Ser Thr Met Ser Thr Val His
       1                    5                    10                    15
       Leu Ser Ser Asp Gly Thr Tyr Phe Tyr Trp Ile Trp Ser Pro Ala Ser
```

```
              20                      25                      30
Leu Asn Glu Lys Thr Pro Lys Gly His Ser Val Phe Met Asp Ile Phe
          35                      40                      45
Glu Leu Val Val Glu Asn Gly Val Phe Val Ala Asn Pro Leu Gln Glu
      50                      55                      60
Arg Thr Ile Leu Met Arg Lys Glu Gly Glu Ser Ala Lys Ser Ile Asn
65                      70                      75                      80
Glu Met Leu Leu Ser Arg Leu Ser Arg Tyr Arg Ala Ser Pro Ser Ala
                  85                      90                      95
Thr Leu Ala Ala Leu Thr Gly Ser Thr Ile Ser Asn Thr Leu Lys Glu
              100                     105                     110
Asp Gln Ala Ala Asn Thr Ser Cys Gly Leu Pro Leu Lys Met Leu Arg
          115                     120                     125
Lys Thr Pro Ile Tyr Thr Cys Gly Thr Tyr Leu Val Met Leu Val Pro
          130                     135                     140
Pro Pro Gly Gly Ser Gly Ser Ser Ala Thr Arg Ser Leu Phe Gly Gly
145                     150                     155                     160
Thr Ser Gly Leu Ser Ser Leu Lys Ile Leu Ala Ser Ser Leu Val Tyr
                  165                     170                     175
Asn Ile Ser Asp Gly Gln Phe Thr Ser Arg Ala Asp
              180                     185
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<210> 4649
<211> 3276
<212> DNA
<213> Homo sapiens

<400> 4649

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nntgatcaca taaaaatccg tgcctggcag attgctgggc ttcccgttga ctccttctcc
60
atcgacaatg gcatcattgt atccaattcc agacgctggg ccttaatgat tgaccctcac
120
gggcaggcca ataaatggat taagaacatg gagaaggcga ataaactggc tgtcatcaag
180
ttctctgata gcaactacat gaggatgctg gaaaacgcgc tgcagttagg cacccctgtc
240
ttgattgaaa acattggaga gagctggat gcttctatcg aacctatctt gctcaaggca
300
acattcaaac agcaaggagt tgagtacatg aggctgggtg aaaacatcat tgaatattcc
360
agggatttta agttatacat cacaacccgt ttgaggaatc cacattacct cccagaagtt
420
gccgtgaagg tctgtctcct caacttcatg atcacccccct tgggtctcca agatcaactc
480
cttggcatcg tggctgcgaa ggagaagcca gagctggaag agaaaaagaa ccagttgatt
540
gtggaaagtg ccaagaacaa gaagcatctc aaggaaattg aagataagat cttggaggtt
600
ctctccatgt ccaagggtaa catcctggag gatgaaaccg ccatcaaagt tctgtcctcc
660
tccaaagtgc tatctgaaga gatctcagag aaacagaaag ttgcttccat gacagaaacg
720
cagattgacg agactcggat gggctacaag ccagtggctg tgcattctgc caccatcttc
780
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ttttgtatct cggacctggc caacatcgag ccgatgtacc agtactccct gacttggttc
840

ataaatctct acatgcattc cttgacccac agcacgaaga gcgaggaact gaatctgcgc
900

atcaagtaca tcattgacca tttcaccctg agcatctaca acaacgtgtg ccgttctctg
960

tttgagaagg acaagctact cttctctctc ctcctgacca tcggcatcat gaaacagaag
1020

aaggaaatta cggaggaggt gtggtacttc cttctcactg gaggcatcgc actggataac
1080

ccctaccoca atccagctcc ccaatggctg tctgagaagg catgggcaga gattgtccgt
1140

gcatctgcct tacccaaact gcatggcctg atggagcatt tggaacagaa cctgggtgaa
1200

tggaagctga tctatgactc ggcctggccc catgaggagc aactccctgg gtcttggaag
1260

ttctctcaag gattggagaa gatggtgatc cttcgatgtt tgcggcctga caaaatggtg
1320

ccagcggtcc gggagttcat tgctgaacat atgggaaagc tgtatatcga agcccctacg
1380

ttcgatctcc agggatccta caatgattcc agctgctgtg cgcctttgat ttttgtgttg
1440

tctccaagtg cagacccaat ggcaggcctg ctgaagtttg ctgatgatct tggtatggga
1500

ggtaccagaa cacagaccat ctcccttggc caaggccaag gccctattgc tgccaaaatg
1560

atcaacaatg ccatcaaaga cgggacctgg gtggtcttac agaactgcca cctggccgca
1620

agctggatgc ctaccctgga gaagatttgt gaggaggtga ttgttcctga gagcaccaat
1680

gccagattca gactctggct aaccagctat ccatcagaga gtttccagt cagcattctc
1740

cagaatggaa tcaaaatgac caatgagccc cccaaagggc tccgggccaa cctgttgcgc
1800

tcctacctca atgaccccat ctcagatcct gtgttcttcc aaagctgtgc aaaggcggtg
1860

atgtggcaaa agatgttatt tggcctttgt ttcttccacg ccgttgttca agagagaaga
1920

aacttcggcc ccctagggtg gaatattccc tatgaattca cgaatctga cctgaggatt
1980

agtatgtggc agatccagat gtttctcaat gactacaagg aggtgccctt tgatgctctg
2040

acctacctga caggggaatg taattacgga ggcagagtga ctgatgacaa agaccggcgt
2100

ctcctgctgt cacttctgtc catgttctac tgtaaggaaa ttgaggagga ctattactcc
2160

ctcgctcctg gagacactta ctacatccct cctcatggct cctaccagtc ctatatcgac
2220

tatctcagga atctccccat cacagcccac ccagaagtgt tcggcctcca tgagaacgca
2280

gacatcacca aagacaacca ggaaaccaac cagctgtttg agggggtcct gctgaccctc
2340

cctagacagt caggaggaag tggcaagtcc cctcaggaag tggttgagga gttggcacaa
2400

3845

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gacattctct ccaagcttcc cagagacttt gacctggaag aggtcatgaa gttgtacccc
2460
gtggtctatg aagaatccat gaataccgtc ctaaggcagg agctcatcag attcaacagg
2520
ctgaccaaag tggttcggag gagcctcatc aatcttggcc gagccatcaa aggacaggtc
2580
ctgatgtcct cggagctaga ggaagtcttt aacagcatgc ttgtgggtaa agtgccagcc
2640
atgtgggcag ccaagtctta cccatcactg aagcctctgg ggggctacgt ggctgacctg
2700
ctggcccgcc tgaccttctt ccaggaatgg attgacaagg gcccccctgt ggtattttgg
2760
atctctggat tctacttcac acagtctttt ttgactggcg tctctcaaaa ttatgcccgg
2820
aaatatacca tccccattga ccacattgga tttgagtttg aggtaacccc acaagaaaca
2880
gtgatggaga taaccccga agatggggcc tacatcaaag ggctcttctt agaaggtgcc
2940
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3000
ctgcccatca tttggctgaa acctggggag agcgcaatgt ttctgcatca ggacatctat
3060
gtgtgtccag tctacaaaac aagtgcccgc agaggaaccc tctccaccac aggccactct
3120
accaactatg tcctctccat tgagcttcca acagacatgc cccagaagca ctggataaac
3180
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taaaaagcat ttcattctta aaaaaaaaaa aaaaaa
3276
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<210> 4650
<211> 965
<212> PRT
<213> Homo sapiens

<400> 4650

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Val Glu Tyr Met Arg Leu Gly Glu Asn Ile Ile Glu Tyr Ser Arg Asp
1               5                   10                  15
Phe Lys Leu Tyr Ile Thr Thr Arg Leu Arg Asn Pro His Tyr Leu Pro
                20                  25                  30
Glu Val Ala Val Lys Val Cys Leu Leu Asn Phe Met Ile Thr Pro Leu
            35                  40                  45
Gly Leu Gln Asp Gln Leu Leu Gly Ile Val Ala Ala Lys Glu Lys Pro
        50                  55                  60
Glu Leu Glu Glu Lys Lys Asn Gln Leu Ile Val Glu Ser Ala Lys Asn
65                  70                  75                  80
Lys Lys His Leu Lys Glu Ile Glu Asp Lys Ile Leu Glu Val Leu Ser
                85                  90                  95
Met Ser Lys Gly Asn Ile Leu Glu Asp Glu Thr Ala Ile Lys Val Leu
            100                 105                 110
Ser Ser Ser Lys Val Leu Ser Glu Glu Ile Ser Glu Lys Gln Lys Val
        115                 120                 125
Ala Ser Met Thr Glu Thr Gln Ile Asp Glu Thr Arg Met Gly Tyr Lys
```

```
            130                  135                 140
Pro Val Ala Val His Ser Ala Thr Ile Phe Phe Cys Ile Ser Asp Leu
145                 150                 155                 160
Ala Asn Ile Glu Pro Met Tyr Gln Tyr Ser Leu Thr Trp Phe Ile Asn
                165                 170                 175
Leu Tyr Met His Ser Leu Thr His Ser Thr Lys Ser Glu Glu Leu Asn
                180                 185                 190
Leu Arg Ile Lys Tyr Ile Ile Asp His Phe Thr Leu Ser Ile Tyr Asn
                195                 200                 205
Asn Val Cys Arg Ser Leu Phe Glu Lys Asp Lys Leu Leu Phe Ser Leu
    210                 215                 220
Leu Leu Thr Ile Gly Ile Met Lys Gln Lys Lys Glu Ile Thr Glu Glu
225                 230                 235                 240
Val Trp Tyr Phe Leu Leu Thr Gly Gly Ile Ala Leu Asp Asn Pro Tyr
                245                 250                 255
Pro Asn Pro Ala Pro Gln Trp Leu Ser Glu Lys Ala Trp Ala Glu Ile
                260                 265                 270
Val Arg Ala Ser Ala Leu Pro Lys Leu His Gly Leu Met Glu His Leu
    275                 280                 285
Glu Gln Asn Leu Gly Glu Trp Lys Leu Ile Tyr Asp Ser Ala Trp Pro
    290                 295                 300
His Glu Glu Gln Leu Pro Gly Ser Trp Lys Phe Ser Gln Gly Leu Glu
305                 310                 315                 320
Lys Met Val Ile Leu Arg Cys Leu Arg Pro Asp Lys Met Val Pro Ala
                325                 330                 335
Val Arg Glu Phe Ile Ala Glu His Met Gly Lys Leu Tyr Ile Glu Ala
                340                 345                 350
Pro Thr Phe Asp Leu Gln Gly Ser Tyr Asn Asp Ser Ser Cys Cys Ala
                355                 360                 365
Pro Leu Ile Phe Val Leu Ser Pro Ser Ala Asp Pro Met Ala Gly Leu
    370                 375                 380
Leu Lys Phe Ala Asp Asp Leu Gly Met Gly Gly Thr Arg Thr Gln Thr
385                 390                 395                 400
Ile Ser Leu Gly Gln Gly Gln Gly Pro Ile Ala Ala Lys Met Ile Asn
                405                 410                 415
Asn Ala Ile Lys Asp Gly Thr Trp Val Val Leu Gln Asn Cys His Leu
                420                 425                 430
Ala Ala Ser Trp Met Pro Thr Leu Glu Lys Ile Cys Glu Glu Val Ile
    435                 440                 445
Val Pro Glu Ser Thr Asn Ala Arg Phe Arg Leu Trp Leu Thr Ser Tyr
    450                 455                 460
Pro Ser Glu Lys Phe Pro Val Ser Ile Leu Gln Asn Gly Ile Lys Met
465                 470                 475                 480
Thr Asn Glu Pro Pro Lys Gly Leu Arg Ala Asn Leu Leu Arg Ser Tyr
                485                 490                 495
Leu Asn Asp Pro Ile Ser Asp Pro Val Phe Phe Gln Ser Cys Ala Lys
                500                 505                 510
Ala Val Met Trp Gln Lys Met Leu Phe Gly Leu Cys Phe Phe His Ala
    515                 520                 525
Val Val Gln Glu Arg Arg Asn Phe Gly Pro Leu Gly Trp Asn Ile Pro
    530                 535                 540
Tyr Glu Phe Asn Glu Ser Asp Leu Arg Ile Ser Met Trp Gln Ile Gln
545                 550                 555                 560
Met Phe Leu Asn Asp Tyr Lys Glu Val Pro Phe Asp Ala Leu Thr Tyr
```

```
                    565                 570                 575
Leu Thr Gly Glu Cys Asn Tyr Gly Gly Arg Val Thr Asp Asp Lys Asp
            580                 585                 590
Arg Arg Leu Leu Leu Ser Leu Leu Ser Met Phe Tyr Cys Lys Glu Ile
            595                 600                 605
Glu Glu Asp Tyr Tyr Ser Leu Ala Pro Gly Asp Thr Tyr Tyr Ile Pro
        610                 615                 620
Pro His Gly Ser Tyr Gln Ser Tyr Ile Asp Tyr Leu Arg Asn Leu Pro
625                 630                 635                 640
Ile Thr Ala His Pro Glu Val Phe Gly Leu His Glu Asn Ala Asp Ile
                645                 650                 655
Thr Lys Asp Asn Gln Glu Thr Asn Gln Leu Phe Glu Gly Val Leu Leu
             660                 665                 670
Thr Leu Pro Arg Gln Ser Gly Gly Ser Gly Lys Ser Pro Gln Glu Val
            675                 680                 685
Val Glu Glu Leu Ala Gln Asp Ile Leu Ser Lys Leu Pro Arg Asp Phe
        690                 695                 700
Asp Leu Glu Glu Val Met Lys Leu Tyr Pro Val Val Tyr Glu Glu Ser
705                 710                 715                 720
Met Asn Thr Val Leu Arg Gln Glu Leu Ile Arg Phe Asn Arg Leu Thr
                725                 730                 735
Lys Val Val Arg Arg Ser Leu Ile Asn Leu Gly Arg Ala Ile Lys Gly
                740                 745                 750
Gln Val Leu Met Ser Ser Glu Leu Glu Glu Val Phe Asn Ser Met Leu
        755                 760                 765
Val Gly Lys Val Pro Ala Met Trp Ala Ala Lys Ser Tyr Pro Ser Leu
        770                 775                 780
Lys Pro Leu Gly Gly Tyr Val Ala Asp Leu Leu Ala Arg Leu Thr Phe
785                 790                 795                 800
Phe Gln Glu Trp Ile Asp Lys Gly Pro Pro Val Val Phe Trp Ile Ser
                805                 810                 815
Gly Phe Tyr Phe Thr Gln Ser Phe Leu Thr Gly Val Ser Gln Asn Tyr
            820                 825                 830
Ala Arg Lys Tyr Thr Ile Pro Ile Asp His Ile Gly Phe Glu Phe Glu
        835                 840                 845
Val Thr Pro Gln Glu Thr Val Met Glu Asn Asn Pro Glu Asp Gly Ala
        850                 855                 860
Tyr Ile Lys Gly Leu Phe Leu Glu Gly Ala Arg Trp Asp Arg Lys Thr
865                 870                 875                 880
Met Gln Ile Gly Glu Ser Leu Pro Lys Ile Leu Tyr Asp Pro Leu Pro
                885                 890                 895
Ile Ile Trp Leu Lys Pro Gly Glu Ser Ala Met Phe Leu His Gln Asp
             900                 905                 910
Ile Tyr Val Cys Pro Val Tyr Lys Thr Ser Ala Arg Arg Gly Thr Leu
        915                 920                 925
Ser Thr Thr Gly His Ser Thr Asn Tyr Val Leu Ser Ile Glu Leu Pro
        930                 935                 940
Thr Asp Met Pro Gln Lys His Trp Ile Asn Arg Gly Val Ala Ser Leu
945                 950                 955                 960
Cys Gln Leu Asp Asn
                965
```

<210> 4651
<211> 869

3848

<212> DNA
<213> Homo sapiens

<400> 4651
ngggcccgca ctttcccgga gtgcaccccg cggccgccag ccggggcgat ggcggggctc
60
tggctggggc tcgtgtggca gaagctgctg ctgtggggcg cggcgagtgc cgtttccctg
120
gccggcgcca gtctggtcct gagcctgctg cagagggtgg cgagctacgc gcggaaatgg
180
cagcagatgc ggcccatccc cacggtggcc cgcgcctacc cactggtggg ccacgcgctg
240
ctgatgaagc cggacgggcg agaatttttt cagcagatca ttgagtacac agaggaatac
300
cgccacatgc cgctgctgaa gctctgggtc gggccagtgc ccatggtggc cctttataat
360
gcagaaaatg tggaggtaat tttaactagt tcaaagcaaa ttgacaaatc ctctatgtac
420
aagttttttag aaccatggct tggcctagga cttcttacaa gtactggaaa caaatggcgc
480
tccaggagaa agatgttaac acccactttc cattttacca ttctggaaga tttcttagat
540
atcatgaatg aacaagcaaa tatattggtt aagaaacttg aaaaacacat taaccaagaa
600
gcatttaact gcttttttta catcactctt tgtgccttag atatcatctg tgaaacagct
660
atggggaaga atattggtgc tcaaagtaat gatgattccg agtatgtccg tgcagtttat
720
agaatgagtg agatgatatt tccaagaata aagatgccct ggctttggct tgatctctgg
780
taccttatgt ttaaagaagg atgggaacac aaaaagagcc ttaagatcct acatactttt
840
acccacagtg tcatcccgga acgggccaa
869

<210> 4652
<211> 289
<212> PRT
<213> Homo sapiens

<400> 4652
Xaa Ala Arg Thr Phe Pro Glu Cys Thr Pro Arg Pro Pro Ala Gly Ala
 1   5   10   15
Met Ala Gly Leu Trp Leu Gly Leu Val Trp Gln Lys Leu Leu Leu Trp
            20   25   30
Gly Ala Ala Ser Ala Val Ser Leu Ala Gly Ala Ser Leu Val Leu Ser
            35   40   45
Leu Leu Gln Arg Val Ala Ser Tyr Ala Arg Lys Trp Gln Gln Met Arg
        50   55   60
Pro Ile Pro Thr Val Ala Arg Ala Tyr Pro Leu Val Gly His Ala Leu
65   70   75   80
Leu Met Lys Pro Asp Gly Arg Glu Phe Phe Gln Gln Ile Ile Glu Tyr
                85   90   95
Thr Glu Glu Tyr Arg His Met Pro Leu Leu Lys Leu Trp Val Gly Pro

```
                 100                  105                  110
Val Pro Met Val Ala Leu Tyr Asn Ala Glu Asn Val Glu Val Ile Leu
             115                  120                  125
Thr Ser Ser Lys Gln Ile Asp Lys Ser Ser Met Tyr Lys Phe Leu Glu
         130                  135                  140
Pro Trp Leu Gly Leu Gly Leu Leu Thr Ser Thr Gly Asn Lys Trp Arg
145                  150                  155                  160
Ser Arg Arg Lys Met Leu Thr Pro Thr Phe His Phe Thr Ile Leu Glu
                 165                  170                  175
Asp Phe Leu Asp Ile Met Asn Glu Gln Ala Asn Ile Leu Val Lys Lys
             180                  185                  190
Leu Glu Lys His Ile Asn Gln Glu Ala Phe Asn Cys Phe Phe Tyr Ile
         195                  200                  205
Thr Leu Cys Ala Leu Asp Ile Ile Cys Glu Thr Ala Met Gly Lys Asn
     210                  215                  220
Ile Gly Ala Gln Ser Asn Asp Asp Ser Glu Tyr Val Arg Ala Val Tyr
225                  230                  235                  240
Arg Met Ser Glu Met Ile Phe Pro Arg Ile Lys Met Pro Trp Leu Trp
                 245                  250                  255
Leu Asp Leu Trp Tyr Leu Met Phe Lys Glu Gly Trp Glu His Lys Lys
             260                  265                  270
Ser Leu Lys Ile Leu His Thr Phe Thr His Ser Val Ile Pro Glu Arg
         275                  280                  285
Ala
```

```
<210> 4653
<211> 1276
<212> DNA
<213> Homo sapiens

<400> 4653
nagcgctccc gtgggtggaa cagtgactct tcgagaagac agtgccaaga ggttggagag
60
gagggcacgc cgcatctccg catgtctgtc ggattattcg ctagccagcg acagtggggt
120
gtttgaacct ctaaccaaaa ggaacgaaga tgccgaggag cctgcctacg gagacacggc
180
cagtaacgga gatccccaga tccacgtggg actcctgcgc gacagtggca gcgagtgtct
240
cctcgtgcac gtgctgcagc tgaagaaccc ggcggggctg gcggtgaagg aagactgcaa
300
agtccacatc cgagtctatt tgcccccact tcggtggata gcggctgtag caactgcacc
360
cagaccagcc ctccgtaccc agagccctgt tgcatgggta tcgactccat cctgggccac
420
ccatttgctg ctcaggcagg gccttacagc cccgagaaat tcagccctc gcctcttaag
480
gttgataagg aaaccaacac ggaagatctc tttctggaag aagcagccag cctcgtgaag
540
gagcggccca gccgccgggc ccgagggtcg ccttttgttc ggagtggcac gattgtccgt
600
tcccagacat tctcgcctgg agcacgaagc cagtatgttt gcagacttta tcgtagtgac
660
```

```
agcgacagtt caacgctgcc ccggaagtcc ccctttgtcc gaaatacttt ggaaagacga
720
accecttcgct ataagcagtc atgcaggtct tccctggctg agctcatggc ccgcacctcc
780
ctggacttgg agctggatct ccaggcgtcg agaacacggc agaggcagct gaatgaggag
840
ctctgcgccc tccgtgagct gcggcagcgg ttggaggacg cccagctccg tggccagact
900
gacctcccac cctgggtgct tcgggacgag cggctccgtg cctgctgcg ggaggccgag
960
cggcagacaa gacagaccaa acttgactac cgtcatgagc aggcggctga gaagatgctg
1020
aagaaggcct ccaaggagat ctaccagctg cgtgggcaga gccacaaaga gcccatccaa
1080
gtgcagacct ttagggagaa gatagcattc ttcacaaggc caaggatcaa catacctcct
1140
ctcccagccg acgacgtctg atggagtgca ttgtgcacat gaagtattta tccacctgtt
1200
ttattttcat gaagttctta gactagctga atttgtcttt aaaatatttg tgcaaagcta
1260
ttaatataca catttt
1276
```

```
<210> 4654
<211> 255
<212> PRT
<213> Homo sapiens
```

```
<400> 4654
Met Gly Ile Asp Ser Ile Leu Gly His Pro Phe Ala Ala Gln Ala Gly
1               5                   10                  15
Pro Tyr Ser Pro Glu Lys Phe Gln Pro Ser Pro Leu Lys Val Asp Lys
            20                  25                  30
Glu Thr Asn Thr Glu Asp Leu Phe Leu Glu Glu Ala Ala Ser Leu Val
        35                  40                  45
Lys Glu Arg Pro Ser Arg Arg Ala Arg Gly Ser Pro Phe Val Arg Ser
    50                  55                  60
Gly Thr Ile Val Arg Ser Gln Thr Phe Ser Pro Gly Ala Arg Ser Gln
65                  70                  75                  80
Tyr Val Cys Arg Leu Tyr Arg Ser Asp Ser Asp Ser Ser Thr Leu Pro
                85                  90                  95
Arg Lys Ser Pro Phe Val Arg Asn Thr Leu Glu Arg Arg Thr Leu Arg
            100                 105                 110
Tyr Lys Gln Ser Cys Arg Ser Ser Leu Ala Glu Leu Met Ala Arg Thr
            115                 120                 125
Ser Leu Asp Leu Glu Leu Asp Leu Gln Ala Ser Arg Thr Arg Gln Arg
        130                 135                 140
Gln Leu Asn Glu Glu Leu Cys Ala Leu Arg Glu Leu Arg Gln Arg Leu
145                 150                 155                 160
Glu Asp Ala Gln Leu Arg Gly Gln Thr Asp Leu Pro Pro Trp Val Leu
                165                 170                 175
Arg Asp Glu Arg Leu Arg Gly Leu Leu Arg Glu Ala Glu Arg Gln Thr
            180                 185                 190
Arg Gln Thr Lys Leu Asp Tyr Arg His Glu Gln Ala Ala Glu Lys Met
```

```
          195                    200                    205
Leu Lys Lys Ala Ser Lys Glu Ile Tyr Gln Leu Arg Gly Gln Ser His
    210                    215                    220
Lys Glu Pro Ile Gln Val Gln Thr Phe Arg Glu Lys Ile Ala Phe Phe
225                    230                    235                    240
Thr Arg Pro Arg Ile Asn Ile Pro Pro Leu Pro Ala Asp Asp Val
                   245                    250                    255
```

```
<210> 4655
<211> 456
<212> DNA
<213> Homo sapiens
```

```
<400> 4655
gcggccgcgc aggtcctcgc gcttgcggaa ggtgcgcacg tactccatgc ggtccagcgc
60
cacgagcagc aggaacaggc cgggcacaca cacagacagc agcagcgtca gcgccttgcg
120
cgccacgggg tccgccgcgc cgcgccgcgc cgccttgtag ttctggaaga tgaagtagag
180
cttgatctcc agcacgaaga tgtaaaggaa ccacaggatc atggcgtagc cgcgcttggc
240
cgtgcgcacc tcggcgccca cccacacggc cacgtagcgc agcaccagca ggaagcacac
300
gtcgcccacc agcacgatga tgcacacgcc gatcttgcgc gggccctggt tctgctccac
360
caggtacgcg tccatgacgg ccatgctgcc catgatcacc agcgtggtca ggcacacgtg
420
gcgccggtcc gggggcggca gcaccatggt cggccg
456
```

```
<210> 4656
<211> 152
<212> PRT
<213> Homo sapiens
```

```
<400> 4656
Ala Ala Ala Gln Val Leu Ala Leu Ala Glu Gly Ala His Val Leu His
1                   5                   10                  15
Ala Val Gln Arg His Glu Gln Gln Glu Gln Ala Gly His Thr His Arg
               20                  25                  30
Gln Gln Gln Arg Gln Arg Leu Ala Arg His Gly Val Arg Arg Ala Ala
           35                  40                  45
Pro Arg Arg Leu Val Val Leu Glu Asp Glu Val Glu Leu Asp Leu Gln
       50                  55                  60
His Glu Asp Val Lys Glu Pro Gln Asp His Gly Val Ala Ala Leu Gly
65                  70                  75                  80
Arg Ala His Leu Gly Ala His Pro His Gly His Val Ala Gln His Gln
               85                  90                  95
Gln Glu Ala His Val Ala His Gln His Asp Asp Ala His Ala Asp Leu
           100                 105                 110
Ala Arg Ala Leu Val Leu Leu His Gln Val Arg Val His Asp Gly His
           115                 120                 125
Ala Ala His Asp His Gln Arg Gly Gln Ala His Val Ala Pro Val Arg
```

3852

```
      130                135                140
Gly Arg Gln His His Gly Arg Pro
145                150
```

```
<210> 4657
<211> 723
<212> DNA
<213> Homo sapiens
```

```
<400> 4657
nnacgcgtga tggctggcgg agtcatggac aaggagtacg tgggttttgc tgccctcccc
60
aaccagctgc accgcaagtc tgtcaagaag gggtttgact tcacgctaat ggtggcaggg
120
gagtcaggcc tagggaaatc caccctcatc aacagcctct tcctcaccaa cctctatgag
180
gatcgccagg tgccagaggc cagtgctcgc ttgacacaga ccctggccat tgagcgccgg
240
ggcgtagaga ttgaggaagg gggtgtgaaa gtgaagctga cccttgtgga cacacctggc
300
tttggggact cagtggactg ctctgactgc tggcttccgg tggtgaaatt catcgaggag
360
caatttgagc agtaccttag ggatgagagt ggcctgaacc ggaagaacat ccaggactcc
420
cgagtccact gctgcctcta cttcatctca cccttcggcc gggctccggc ccctagatgt
480
ggcttcctcc gggcaataca cgagaaagtc aacatcatcc cagtcattgg caaagcggat
540
gccctgatgc cccaggaaac ccaggccctc aagcagaaga tccgggatca gttgaaggaa
600
gaggagatcc acatctacca gttccccgaa tgtgactctg atgaagatga agacttcaag
660
aggcaggatg cagagatgaa ggaaagcatc ccttttgcag tcgtgggatc atgcgaggtg
720
gta
723
```

```
<210> 4658
<211> 233
<212> PRT
<213> Homo sapiens
```

```
<400> 4658
Met Asp Lys Glu Tyr Val Gly Phe Ala Ala Leu Pro Asn Gln Leu His
1               5                10                15
Arg Lys Ser Val Lys Lys Gly Phe Asp Phe Thr Leu Met Val Ala Gly
          20                25                30
Glu Ser Gly Leu Gly Lys Ser Thr Leu Ile Asn Ser Leu Phe Leu Thr
          35                40                45
Asn Leu Tyr Glu Asp Arg Gln Val Pro Glu Ala Ser Ala Arg Leu Thr
    50                55                60
Gln Thr Leu Ala Ile Glu Arg Arg Gly Val Glu Ile Glu Glu Gly Gly
65                70                75                80
Val Lys Val Lys Leu Thr Leu Val Asp Thr Pro Gly Phe Gly Asp Ser
```

```
                    85                   90                   95
Val Asp Cys Ser Asp Cys Trp Leu Pro Val Val Lys Phe Ile Glu Glu
               100                 105                 110
Gln Phe Glu Gln Tyr Leu Arg Asp Glu Ser Gly Leu Asn Arg Lys Asn
           115                 120                 125
Ile Gln Asp Ser Arg Val His Cys Cys Leu Tyr Phe Ile Ser Pro Phe
       130                 135                 140
Gly Arg Ala Pro Ala Pro Arg Cys Gly Phe Leu Arg Ala Ile His Glu
145                 150                 155                 160
Lys Val Asn Ile Ile Pro Val Ile Gly Lys Ala Asp Ala Leu Met Pro
               165                 170                 175
Gln Glu Thr Gln Ala Leu Lys Gln Lys Ile Arg Asp Gln Leu Lys Glu
           180                 185                 190
Glu Glu Ile His Ile Tyr Gln Phe Pro Glu Cys Asp Ser Asp Glu Asp
       195                 200                 205
Glu Asp Phe Lys Arg Gln Asp Ala Glu Met Lys Glu Ser Ile Pro Phe
   210                 215                 220
Ala Val Val Gly Ser Cys Glu Val Val
225                 230
```

```
<210> 4659
<211> 864
<212> DNA
<213> Homo sapiens

<400> 4659
tttaaaagca gtggaaatta gtaaacaagg ttccgagcag gaaatgtctt gtggcctggg
60
agagaatctc accacaaatg aaaactacgt gaaaggccct gcactgaaaa tgcaagctca
120
ggcgccggtg gtcgttgtga cccaacctgg agtcggtccc ggtccggccc cccagaactc
180
caactggcag acaggcatgt gtgactgttt cagcgactgc ggagtctgtc tctgtggcac
240
attttgtttc ccgtgccttg ggtgtcaagt tgcagctgat atgaatgaat gctgtctgtg
300
tggaacaagc gtcgcaatga ggactctcta caggacccga tatggcatcc ctggatctat
360
ttgtgatgac tatatggcaa ctctttgctg tcctcattgt actctttgcc aaatcaagag
420
agatatcaac agaaggagag ccatgcgtac tttctaaaaa ctgatggtga aaagctctta
480
ccgaagcaac aaaattcagc agacacctct tcagcttgag ttcttcacca tcttttgcaa
540
ctgaaatatg atggatatgc ttaagtacaa ctgatggcat gaaaaaaatc aaattttga
600
tttattataa atgaatgttg tccctgaact tagctaaatg gtgcaactta gtttctcctt
660
gctttcatat tatcgaattc gaatttcctg gcttataaac tttttaaatt acatttgaaa
720
tataaaccaa atgaaatatt ttactgataa gattcttcat gcttctttgc tctccttaaa
780
atgtcttttt cactagttag ttccaagggt cagtctcata attttgttct tatactttga
840
```

tttccttttt cttttttttt tttg
864

<210> 4660
<211> 192
<212> PRT
<213> Homo sapiens

<400> 4660
Met Pro Ser Val Val Leu Lys His Ile His His Ile Ser Val Ala Lys
 1   5   10   15
Asp Gly Glu Glu Leu Lys Leu Lys Arg Cys Leu Leu Asn Phe Val Ala
             20   25   30
Ser Val Arg Ala Phe His His Gln Phe Leu Glu Ser Thr His Gly Ser
             35   40   45
Pro Ser Val Asp Ile Ser Leu Asp Leu Ala Lys Ser Thr Met Arg Thr
             50   55   60
Ala Lys Ser Cys His Ile Val Ile Thr Asn Arg Ser Arg Asp Ala Ile
65   70   75   80
Ser Gly Pro Val Glu Ser Pro His Cys Asp Ala Cys Ser Thr Gln Thr
                 85   90   95
Ala Phe Ile His Ile Ser Cys Asn Leu Thr Pro Lys Ala Arg Glu Thr
                 100   105   110
Lys Cys Ala Thr Glu Thr Asp Ser Ala Val Ala Glu Thr Val Thr His
             115   120   125
Ala Cys Leu Pro Val Gly Val Leu Gly Gly Arg Thr Gly Thr Asp Ser
     130   ·   135   140
Arg Leu Gly His Asn Asp His Arg Arg Leu Ser Leu His Phe Gln Cys
145   150   155   160
Arg Ala Phe His Val Val Phe Ile Cys Gly Glu Ile Leu Ser Gln Ala
                 165   170   175
Thr Arg His Phe Leu Leu Gly Thr Leu Phe Thr Asn Phe His Cys Phe
                 180   185   190

<210> 4661
<211> 153
<212> DNA
<213> Homo sapiens

<400> 4661
cggatctgca tgccgctcac cgtagacgag tacaaaattg gacagctgta catgatcagc
60
aaacacagcc atgaacagag tgaccgggga gaagggggtgg aggtcgtcca gaatgagccc
120
tttgaggacc ctcaccatgg ccatgggcag ttc
153

<210> 4662
<211> 51
<212> PRT
<213> Homo sapiens

<400> 4662
Arg Ile Cys Met Pro Leu Thr Val Asp Glu Tyr Lys Ile Gly Gln Leu

3855

```
       1                5                     10                    15
       Tyr Met Ile Ser Lys His Ser His Glu Gln Ser Asp Arg Gly Glu Gly
                        20                     25                    30
       Val Glu Val Val Gln Asn Glu Pro Phe Glu Asp Pro His His Gly His
                35                    40                    45
       Gly Gln Phe
           50
```

<210> 4663
<211> 1550
<212> DNA
<213> Homo sapiens

<400> 4663
atgttccggc acacggacag cctctttccc atcctactgc agacgttatc ggatgaatcg
60
gatgaggtga tcctgaagga cctggaggtg ctggcagaaa tcgcttcctc ccccgcaggc
120
cagacggatg acccaggccc cctcgatggc cctgacctcc aggccagcca ctcagagctc
180
caggtgccca cccctggcag agccggccta ctgaacacct ctggtaccaa aggcttagaa
240
tgttctcctt caactcccac catgaattct tactttttata agttcatgat caaccttctc
300
aagagattca gcagcgaacg gaagctcctg gaggtcagag gccctttcat catcaggcag
360
ctgtgcctcc tgctgaatgc ggagaacatc ttccactcaa tggcagacat cctgctgcgg
420
gaggaggacc tcaagttcgc ctcgaccatg gtccacgccc tcaacaccat cctgctgacc
480
tccacagagc tcttccagct aaggaaccag ctgaaggacc tgaagaccct ggagagccag
540
aacctgttct gctgcctgta ccgctcctgg tgccacaacc cagtcaccac ggtgtccctc
600
tgcttcctca cccagaacta ccggcacgcc tatgacctca tccagaagtt tggggacctg
660
gaggtcaccg tggacttcct cgcagaggtg gacaagctgg tgcagctgat tgagtgcccc
720
atcttcacat atctgcgcct gcagctgctg gacgtgaaga caacccccta cctgatcaag
780
gccctctacg gcctgctcat gctcctgccg cagagcagcg ccttccagct gctctcgcac
840
cggctccagt gcgtgcccaa ccctgagctg ctgcagaccg aagacagtct aaaggcagcc
900
cccaagtccc agaaagctga ctcccctagc atcgactacg cagagctgct gcagcacttt
960
gagaaggtcc agaacaagca cctggaagtg cggcaccagc ggagcgggcg tggggaccac
1020
ctggaccgga gggttgtcct ctgacaggcc tggcacggag gagggcccac cgagtggtcc
1080
catgaaacac taagggtcgt cacgccctcc cgaggagctc aaggacctgc ctgtcaggac
1140
cagggctggg cctgccaacc cagggcagtg ttggggccgg aggctgctgt gtctgcccaa
1200
```

gctcctctca gagtccagtc cccaggcctc cagcgctgtc agctgcaccc tggcattctc
1260

acagagctgg ctgcccaccc agtggggggc tatagcctca gagaccactc atcctctgga
1320

atcaacctct ttctaatacc ctcttggaaa aagagcttgc ccctcctcca gcacactaga
1380

gctctggcct tgtgtgtata tgtatacata cgtgaacaca tgcctgtgtg tgtgtgtgtg
1440

tgtgtacttg tatgcacgta ggcaccagca caaagatctg aatgatgcac cccacccca
1500

ccccaataaa gaaataacag aaaaccctca aaaaaaaaaa aaaaaaaaa
1550

<210> 4664
<211> 347
<212> PRT
<213> Homo sapiens

<400> 4664
Met Phe Arg His Thr Asp Ser Leu Phe Pro Ile Leu Leu Gln Thr Leu
1   5   10   15
Ser Asp Glu Ser Asp Glu Val Ile Leu Lys Asp Leu Glu Val Leu Ala
            20   25   30
Glu Ile Ala Ser Ser Pro Ala Gly Gln Thr Asp Asp Pro Gly Pro Leu
        35   40   45
Asp Gly Pro Asp Leu Gln Ala Ser His Ser Glu Leu Gln Val Pro Thr
    50   55   60
Pro Gly Arg Ala Gly Leu Leu Asn Thr Ser Gly Thr Lys Gly Leu Glu
65   70   75   80
Cys Ser Pro Ser Thr Pro Thr Met Asn Ser Tyr Phe Tyr Lys Phe Met
                85   90   95
Ile Asn Leu Leu Lys Arg Phe Ser Ser Glu Arg Lys Leu Leu Glu Val
            100   105   110
Arg Gly Pro Phe Ile Ile Arg Gln Leu Cys Leu Leu Leu Asn Ala Glu
        115   120   125
Asn Ile Phe His Ser Met Ala Asp Ile Leu Leu Arg Glu Glu Asp Leu
    130   135   140
Lys Phe Ala Ser Thr Met Val His Ala Leu Asn Thr Ile Leu Leu Thr
145   150   155   160
Ser Thr Glu Leu Phe Gln Leu Arg Asn Gln Leu Lys Asp Leu Lys Thr
                165   170   175
Leu Glu Ser Gln Asn Leu Phe Cys Cys Leu Tyr Arg Ser Trp Cys His
            180   185   190
Asn Pro Val Thr Thr Val Ser Leu Cys Phe Leu Thr Gln Asn Tyr Arg
            195   200   205
His Ala Tyr Asp Leu Ile Gln Lys Phe Gly Asp Leu Glu Val Thr Val
    210   215   220
Asp Phe Leu Ala Glu Val Asp Lys Leu Val Gln Leu Ile Glu Cys Pro
225   230   235   240
Ile Phe Thr Tyr Leu Arg Leu Gln Leu Leu Asp Val Lys Asn Asn Pro
                245   250   255
Tyr Leu Ile Lys Ala Leu Tyr Gly Leu Leu Met Leu Leu Pro Gln Ser
                260   265   270
Ser Ala Phe Gln Leu Leu Ser His Arg Leu Gln Cys Val Pro Asn Pro

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        275                      280                      285
Glu Leu Leu Gln Thr Glu Asp Ser Leu Lys Ala Ala Pro Lys Ser Gln
        290                      295                      300
Lys Ala Asp Ser Pro Ser Ile Asp Tyr Ala Glu Leu Leu Gln His Phe
305                      310                      315                      320
Glu Lys Val Gln Asn Lys His Leu Glu Val Arg His Gln Arg Ser Gly
                    325                      330                      335
Arg Gly Asp His Leu Asp Arg Arg Val Val Leu
                    340                      345
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<210> 4665
<211> 1043
<212> DNA
<213> Homo sapiens

<400> 4665
nttcggcacg agggtggatc tcatcgaaag gcggcgcgat ctgtgtcggg cattaccaga
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agagtcttca tgtggacagt ctcagggaca ccatgtagag aattttggtc tcgattcaga
120
aaagagaaag agccagtggt tgttgagaca gtagaagaga aaaaggaacc tatcctagtg
180
tgtccacctt tacgaagccg agcatacaca ccacctgaag atctccagag tcgtttggaa
240
tcttacgtta aagaagtttt tggttcatct cttcctagta attggcaaga catctccctg
300
gaagatagtc gtctaaagtt caatcttctg gctcatttag ctgatgactt gggtcatgta
360
gtccctaact ccagactcca ccagatgtgc agggttagag atgttcttga tttctataat
420
gtccctattc aagatagatc taaatttgat gaactcagtg ccagtaatct gccccccaat
480
ttgaaaatca cttggagtta ctaagcaatt cggaagagaa acacattgaa atcactgtct
540
ttccctgagc aaggggggctg ctcattagat cttttgatac tttaccatgt gaaatactac
600
cagaactgtt ctctaaaccc acttttttctg tagaggaatg tatcatcttt ttttttctca
660
tattacaaat ggacaaataa cggactttct attttcatat ttgctgaaac cattttttaa
720
atgaaattag gtcattattt atgaaaagtt ttgagagggc actgtcaact tgggtttaag
780
acaggaggac attgcaagtt cacacctttc ataagcataa agtagttgca agaaagtatt
840
ttcatcctgt taggattcat atctaagata gagttatgca ttgcacatac acaaataaac
900
ttttattaga tagataccta taaagaaac ataaagtat gttgtgtatt actgacagtt
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ctagattaat ttcttttaga attaaagtag atttgttaaa aaaaaaaaaa aaaaaaaaaa
1020
aaaaaaaaaa aaaaaaaaaa aaa
1043

<210> 4666

<211> 167
<212> PRT
<213> Homo sapiens

<400> 4666
Xaa Arg His Glu Gly Gly Ser His Arg Lys Ala Ala Arg Ser Val Ser
1   5   10   15
Gly Ile Thr Arg Arg Val Phe Met Trp Thr Val Ser Gly Thr Pro Cys
            20   25   30
Arg Glu Phe Trp Ser Arg Phe Arg Lys Glu Lys Glu Pro Val Val Val
        35   40   45
Glu Thr Val Glu Glu Lys Lys Glu Pro Ile Leu Val Cys Pro Pro Leu
    50   55   60
Arg Ser Arg Ala Tyr Thr Pro Pro Glu Asp Leu Gln Ser Arg Leu Glu
65   70   75   80
Ser Tyr Val Lys Glu Val Phe Gly Ser Ser Leu Pro Ser Asn Trp Gln
            85   90   95
Asp Ile Ser Leu Glu Asp Ser Arg Leu Lys Phe Asn Leu Leu Ala His
            100   105   110
Leu Ala Asp Asp Leu Gly His Val Val Pro Asn Ser Arg Leu His Gln
        115   120   125
Met Cys Arg Val Arg Asp Val Leu Asp Phe Tyr Asn Val Pro Ile Gln
    130   135   140
Asp Arg Ser Lys Phe Asp Glu Leu Ser Ala Ser Asn Leu Pro Pro Asn
145   150   155   160
Leu Lys Ile Thr Trp Ser Tyr
                165

<210> 4667
<211> 1031
<212> DNA
<213> Homo sapiens

<400> 4667
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120
cctctgctgg aggggaaagc ccgctcctgt tttgctatga ccgagcccca ggttgcctct
180
tcagatgcca ccaacattga ggcttccatc agagaggagg acagcttcta tgtcataaac
240
ggtcacaaat ggtggatcac aggcatcctg gatcctcgtt gccaactctg tgtgtttatg
300
ggaaaaacag acccacatgc accaagacac cggcagcagt ctgtgctctt ggttcccatg
360
gataccccag ggataaaaat catccggcct ctgacggtgt atggactgga agatgcacca
420
ggtggccatg gtgaagtccg atttgagcac gtgcgtgtgc ccaaagagaa catggtcctg
480
ggccctggcc gaggctttga gatcgcccag ggcagactgg ccccggcag gatccatcac
540
tgcatgaggc tgatcgggtt ctcagagagg ggcctggcac tcatgaaggc ccgcgtgagt
600

3859

gctttcccc gcacccagca ctgactcaga accaccacct tctgctttgc tgtcggactt
660
caattcctac ctgttttctg agtgcagtcc tagcaggtga agcaaggtga tgtccttgcc
720
aagaagttgc attcctgtct gctttgcatc tgctactttg ctgcagtttg gattcagagc
780
agaatggacc ccactctgtc gaggtgacct gaagggaaac gccaggctct gtagcagcag
840
agggcaaggt tccaaggtgt aaaggtcatg ctgctagcac attattaaaa atcagtctgg
900
gtgcaatggc tcacagctat aatcccagta ctttgggagg tctaggtagg agggttgctt
960
gaagccaagc atttgagacc agcctaggcg aaaaagagag actcagtctc tacaaaaaaa
1020
aaaaaaaaaa a
1031

<210> 4668
<211> 207
<212> PRT
<213> Homo sapiens

<400> 4668
Xaa Ala Met Gly Thr Ser Leu Tyr Ala Pro Glu Val Cys Asn Cys Ser
1   5   10   15
Ala Pro Asp Thr Gly Asn Met Glu Leu Leu Val Arg Tyr Gly Thr Glu
            20   25   30
Ala Gln Lys Ala Arg Trp Leu Ile Pro Leu Leu Glu Gly Lys Ala Arg
        35   40   45
Ser Cys Phe Ala Met Thr Glu Pro Gln Val Ala Ser Ser Asp Ala Thr
    50   55   60
Asn Ile Glu Ala Ser Ile Arg Glu Glu Asp Ser Phe Tyr Val Ile Asn
65   70   75   80
Gly His Lys Trp Trp Ile Thr Gly Ile Leu Asp Pro Arg Cys Gln Leu
                85   90   95
Cys Val Phe Met Gly Lys Thr Asp Pro His Ala Pro Arg His Arg Gln
            100   105   110
Gln Ser Val Leu Leu Val Pro Met Asp Thr Pro Gly Ile Lys Ile Ile
            115   120   125
Arg Pro Leu Thr Val Tyr Gly Leu Glu Asp Ala Pro Gly Gly His Gly
        130   135   140
Glu Val Arg Phe Glu His Val Arg Val Pro Lys Glu Asn Met Val Leu
145   150   155   160
Gly Pro Gly Arg Gly Phe Glu Ile Ala Gln Gly Arg Leu Gly Pro Gly
                165   170   175
Arg Ile His His Cys Met Arg Leu Ile Gly Phe Ser Glu Arg Ala Leu
            180   185   190
Ala Leu Met Lys Ala Arg Val Ser Ala Phe Pro Arg Thr Gln His
        195   200   205

<210> 4669
<211> 683
<212> DNA
<213> Homo sapiens

3860

<400> 4669
nnaagcttca gtgggctacg tggaatcata caagaaaaat atagagcaaa taaaaagaaa
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cagaaagtat ttcaacacaa tgaacttaag aaagagactt gtgttcaggc aggttttcag
120
gacatgaaca taaaaaaaca gattcaggaa cagcaccagg ctgccattat tattcagaag
180
cattgtaaag cctttaaaat aaggaagcat tatctccaca ttagagcaac agtagtttct
240
attcaaagaa gatacagaaa actaactgca gtgcgtaccc aagcagttat ttgtatacag
300
tcttattaca gaggctttaa agtacgaaag gatattcaaa atatgcaccg ggctgccaca
360
ctaattcagt cattctatcg aatgcacagg gccaaagttg attattaaac aaagaaaact
420
gcaattgtgg ttatacagaa ttattatagg ttgtatgtta gagtaaaaac agaaagaaaa
480
aacttttag cagttcagaa atctgtccga actattcagg ctgctttag aggcatgaaa
540
gttagacaaa aattgaaaaa atgtatcaga ggaaaagatg gcagccattg ttaaccaatc
600
tgcactctgc tgttacagaa gtaaaactca gtatgaagct gttcaaagtg aaggtgttat
660
gattcaagag tggtataaag ctt
683

<210> 4670
<211> 135
<212> PRT
<213> Homo sapiens

<400> 4670
Xaa Ser Phe Ser Gly Leu Arg Gly Ile Ile Gln Glu Lys Tyr Arg Ala
 1   5   10   15
Asn Lys Lys Lys Gln Lys Val Phe Gln His Asn Glu Leu Lys Lys Glu
            20   25   30
Thr Cys Val Gln Ala Gly Phe Gln Asp Met Asn Ile Lys Lys Gln Ile
        35   40   45
Gln Glu Gln His Gln Ala Ala Ile Ile Ile Gln Lys His Cys Lys Ala
    50   55   60
Phe Lys Ile Arg Lys His Tyr Leu His Ile Arg Ala Thr Val Val Ser
65   70   75   80
Ile Gln Arg Arg Tyr Arg Lys Leu Thr Ala Val Arg Thr Gln Ala Val
                85   90   95
Ile Cys Ile Gln Ser Tyr Tyr Arg Gly Phe Lys Val Arg Lys Asp Ile
                100   105   110
Gln Asn Met His Arg Ala Ala Thr Leu Ile Gln Ser Phe Tyr Arg Met
        115   120   125
His Arg Ala Lys Val Asp Tyr
        130   135

<210> 4671
<211> 657

3861

<212> DNA
<213> Homo sapiens

<400> 4671
accggtccag ggcattcagg tgttcctcca ggcccaggag agtgctgcac acccgttcca
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gcaccagcgc catccgcttc gaggttgagc ctcctgcagc agtggaatca ggggcctcct
120
ggggctcggc aggggctacc cggctccgct tccgcccagt aatggagact gcagccacgt
180
taggccaggc tgctgcagtg gtttcagcat ctatccgcag ggatccacgg ggaagctggt
240
gtgcgccgga taaagatggc aaccgccgat gagattgtga aactcatgct cgaccacatg
300
acaaacacca ccaacgcgtc ccatgtgcct gtgcagcccg ctcctcagt tgtgatgatg
360
gtcaacaacc tgggtggcct gtcattcctg gaactgggca tcatagccga cgctaccgtc
420
cgctccctgg agggccgcgg ggtgaagatt gcccgtgccc tggtgggcac cttcatgtca
480
gcactggaga tgcctggcat ttctctcacc ctcctgctgg tggatgagcc tctcctgaaa
540
ctgatagatg ctgaaaccac tgcagcagcc tggcctcgaa gcggatggcg ctggtgctgg
600
aacgggtgtg cagcactctc ctgggcctgg aggaacacct gaatgccctg accggt
657

<210> 4672
<211> 152
<212> PRT
<213> Homo sapiens

<400> 4672
Ala Arg Leu Leu Gln Trp Phe Gln His Leu Ser Ala Gly Ile His Gly
1   5   10   15
Glu Ala Gly Val Arg Arg Ile Lys Met Ala Thr Ala Asp Glu Ile Val
                20   25   30
Lys Leu Met Leu Asp His Met Thr Asn Thr Thr Asn Ala Ser His Val
        35   40   45
Pro Val Gln Pro Gly Ser Ser Val Val Met Met Val Asn Asn Leu Gly
    50   55   60
Gly Leu Ser Phe Leu Glu Leu Gly Ile Ile Ala Asp Ala Thr Val Arg
65   70   75   80
Ser Leu Glu Gly Arg Gly Val Lys Ile Ala Arg Ala Leu Val Gly Thr
                85   90   95
Phe Met Ser Ala Leu Glu Met Pro Gly Ile Ser Leu Thr Leu Leu Leu
                100   105   110
Val Asp Glu Pro Leu Leu Lys Leu Ile Asp Ala Glu Thr Thr Ala Ala
        115   120   125
Ala Trp Pro Arg Ser Gly Trp Arg Trp Cys Trp Asn Gly Cys Ala Ala
    130   135   140
Leu Ser Trp Ala Trp Arg Asn Thr
145   150

<210> 4673
<211> 1335
<212> DNA
<213> Homo sapiens

<400> 4673
ccgcggcttc tggctgcgcg gcctgcgcgc gcctcccggg cggattccag ccccgagcgg
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gacagcgcag cggggagcga cgagatttct ctctgatcaa acggacagtt caggactcag
120
aatctaagga tgaatgttca ccgtggcagt gacagtgaca ggttattgcg gcaggaggcc
180
agctgcttag tggatgatac tttagctgta gcccaagaaa aagaagcaaa cagcctggct
240
tcatctggtc ctcataatct tacttatcct ctaggtccca ggaatgaaga cctctcactt
300
gactatgcct ctcagccagc aaatcttcag ttccctcaca taatgcccct tgctgaagac
360
atcaaaggtt cttgcttcca aagtgggaat aaacggaacc atgaaccttt tattgctcca
420
gaaagatttg gaaacagtag tgtgggcttt ggcagtaatt cccattccca agcaccagag
480
aaagtgacgc ttcttgtaga tggcacacgt tttgttgtga atccacagat tttcactgct
540
catccggata ccatgctggg aaggatgttt ggaccaggaa gagagtacaa cttcactcgg
600
cccaatgaga agggagagta tgagattgct gaaggcatca gtgcaactgt atttcgcaca
660
gtgctggatt attacaaaac cggtatcatc aattgtcctg atggcatctc tatcccagat
720
cttagagata cttgtgatta tctctgcatt aattttgact tcaacactat ccgatgtcaa
780
gatctgagtg ctttactcca tgaactgtct aatgacggtg ctcataagca gtttgatcac
840
tacctcgaag agctcatctt gcccatcatg gtgggctgtg ccaagaaagg agaacgagag
900
tgccacattg ttgtgctgac ggatgaggat tctgtggact gggatgaaga ccaccctcca
960
ccaatggggg aggaatattc ccaaattctt tatagctcca agctctacag attcttcaaa
1020
tatattgaga ataggggatgt tgcaaaaaca gtgttaaagg aacggggcct aaaaaacatt
1080
cgcattggaa ttgaaggtta ccctacctgt aaagaaaaaa ttaagagaag gcctggcggc
1140
cgttctgaag tcatctataa ttatgtacaa cgccccttca tccagatgtc atgggaaaag
1200
gaagaaggga agagtcgcca tgtggatttc cagtgtgttc gaagcaaatc cctcacgaat
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1320
caagtggatg aactt
1335

<210> 4674

<211> 402
<212> PRT
<213> Homo sapiens

<400> 4674
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Met Asn Val His Arg Gly Ser Asp Ser Asp Arg Leu Leu Arg Gln Glu
1               5                   10                  15
Ala Ser Cys Leu Val Asp Asp Thr Leu Ala Val Ala Gln Glu Lys Glu
            20                  25                  30
Ala Asn Ser Leu Ala Ser Ser Gly Pro His Asn Leu Thr Tyr Pro Leu
        35                  40                  45
Gly Pro Arg Asn Glu Asp Leu Ser Leu Asp Tyr Ala Ser Gln Pro Ala
    50                  55                  60
Asn Leu Gln Phe Pro His Ile Met Pro Leu Ala Glu Asp Ile Lys Gly
65                  70                  75                  80
Ser Cys Phe Gln Ser Gly Asn Lys Arg Asn His Glu Pro Phe Ile Ala
            85                  90                  95
Pro Glu Arg Phe Gly Asn Ser Ser Val Gly Phe Gly Ser Asn Ser His
            100                 105                 110
Ser Gln Ala Pro Glu Lys Val Thr Leu Leu Val Asp Gly Thr Arg Phe
    115                 120                 125
Val Val Asn Pro Gln Ile Phe Thr Ala His Pro Asp Thr Met Leu Gly
    130                 135                 140
Arg Met Phe Gly Pro Gly Arg Glu Tyr Asn Phe Thr Arg Pro Asn Glu
145                 150                 155                 160
Lys Gly Glu Tyr Glu Ile Ala Glu Gly Ile Ser Ala Thr Val Phe Arg
            165                 170                 175
Thr Val Leu Asp Tyr Tyr Lys Thr Gly Ile Ile Asn Cys Pro Asp Gly
            180                 185                 190
Ile Ser Ile Pro Asp Leu Arg Asp Thr Cys Asp Tyr Leu Cys Ile Asn
            195                 200                 205
Phe Asp Phe Asn Thr Ile Arg Cys Gln Asp Leu Ser Ala Leu Leu His
    210                 215                 220
Glu Leu Ser Asn Asp Gly Ala His Lys Gln Phe Asp His Tyr Leu Glu
225                 230                 235                 240
Glu Leu Ile Leu Pro Ile Met Val Gly Cys Ala Lys Lys Gly Glu Arg
            245                 250                 255
Glu Cys His Ile Val Val Leu Thr Asp Glu Asp Ser Val Asp Trp Asp
            260                 265                 270
Glu Asp His Pro Pro Pro Met Gly Glu Glu Tyr Ser Gln Ile Leu Tyr
    275                 280                 285
Ser Ser Lys Leu Tyr Arg Phe Phe Lys Tyr Ile Glu Asn Arg Asp Val
    290                 295                 300
Ala Lys Thr Val Leu Lys Glu Arg Gly Leu Lys Asn Ile Arg Ile Gly
305                 310                 315                 320
Ile Glu Gly Tyr Pro Thr Cys Lys Glu Lys Ile Lys Arg Arg Pro Gly
            325                 330                 335
Gly Arg Ser Glu Val Ile Tyr Asn Tyr Val Gln Arg Pro Phe Ile Gln
            340                 345                 350
Met Ser Trp Glu Lys Glu Glu Gly Lys Ser Arg His Val Asp Phe Gln
            355                 360                 365
Cys Val Arg Ser Lys Ser Leu Thr Asn Leu Val Ala Ala Gly Asp Asp
    370                 375                 380
Val Leu Glu Asp Gln Glu Ile Leu Met His His Pro Pro Gln Val Asp
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385   390   395   400

Glu Leu

<210> 4675
<211> 2868
<212> DNA
<213> Homo sapiens

<400> 4675
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gcctctgagt ctcctttctc tgaggaagag agcagagagt tcaaccccag cagctctggg
120
cgctcagcga ggaccgttag cagcaacagc ttctgctcag atgacacagg ctgtcctagc
180
agccagtcag tgtctcctgt gaagacaccc tcagatgctg gaaacagccc cattggcttt
240
tgccctggaa gtgatgaagg cttcaccaga aagaaatgca cgattggaat ggttggtgaa
300
ggaagcattc agtcctctcg atataagaag gaatcaaagt caggccttgt gaaaccaggt
360
agtgaagctg attttagctc ctcgagcagc acaggcagca tttccgctcc tgaggtccat
420
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480
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540
cttctgtcca tgctgtgcag gaatcagctg agccctgtca atatccatcc cagttatgca
600
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660
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720
ccagagcagt atttgactcc actgcagcag aaagaggtga cagtgagaca cctcaaaacc
780
aagctgaagg aatctgagcg ccgactccat gaaagggaaa gtgaaatcgt ggagcttaag
840
tcccagctgg cccgcatgcg agaggactgg attgaggagg agtgtcaccg ggtagaggcc
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960
atgcggagca gcttggctga taaagataaa ggcattcaga atattttgt ggacataaac
1020
atccaaaaca agaagctgga gtctctcctt cagagcatgg agatggcaca cagtggctct
1080
ctgagggacg aactgtgcct agactttcca tgtgattccc cagagaagag cttaaccctc
1140
aacccccctc ttgacacaat ggcagatggg ttatctctgg aagagcaggt cacgggggaa
1200
ggggctgaca gggagctact ggtaggagat agcatagcca acagcacaga tttgttcgat
1260
gagatagtga cagccaccac cacagaatct ggtgacctgg agcttgtgca ttccacccct
1320

3865

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ggggctaacg tcctggagct gctgcccata gtcatgggtc aggaggaggg cagtgtggtg
1380
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1440
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1560
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1620
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1680
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1920
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1980
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2040
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2160
gaccctgccg tgtcgtctga ggtacccgtt cttatcctag tggttcagga agagaaaacg
2220
cagtttgcac tttcaagaca gcttctctaa ggctggcatg ttatctcctt gctttgcttt
2280
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2340
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2400
ttactgtctt acttggggtt gataagattt gagtgtttgc aatttttac taaatgtagc
2460
tccaaagtct taaatggctt gtttgttctt aaactgttaa ttgatgaaac tgtgcataag
2520
tttacaatgt actaacttat tttgcttatt atatatagtg ttttattgga aattgtaacc
2580
acacacttca gcatgatgaa aataaagatt agtgtttcca tttaaataaa tgttttatcc
2640
tcccataaaa taataattat ttctgtgatt ttacttctat gtataagaaa gacaatgaat
2700
agcagatctt acatctttat caatagggg tctgtaaaaa ttgaattaaa ttaggaagag
2760
ggaaaaagag ttagttatta agaaaatga agatttccta cccttactta aaaagcatca
2820
tttctgaata aaagtagatt tgtttacttt taaaaaaaaa aaaaaaaa
2868
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<210> 4676

3866

<211> 641
<212> PRT
<213> Homo sapiens

<400> 4676

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Xaa Ile Pro Arg Leu Ile Leu Arg Pro His Met Pro Gln Gln Gln His
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Lys Val Ser Pro Ala Ser Glu Ser Pro Phe Ser Glu Glu Glu Ser Arg
            20                  25                  30
Glu Phe Asn Pro Ser Ser Ser Gly Arg Ser Ala Arg Thr Val Ser Ser
        35                  40                  45
Asn Ser Phe Cys Ser Asp Asp Thr Gly Cys Pro Ser Ser Gln Ser Val
        50                  55                  60
Ser Pro Val Lys Thr Pro Ser Asp Ala Gly Asn Ser Pro Ile Gly Phe
65                  70                  75                  80
Cys Pro Gly Ser Asp Glu Gly Phe Thr Arg Lys Lys Cys Thr Ile Gly
                85                  90                  95
Met Val Gly Glu Gly Ser Ile Gln Ser Ser Arg Tyr Lys Lys Glu Ser
                100                 105                 110
Lys Ser Gly Leu Val Lys Pro Gly Ser Glu Ala Asp Phe Ser Ser Ser
            115                 120                 125
Ser Ser Thr Gly Ser Ile Ser Ala Pro Glu Val His Met Ser Thr Ala
        130                 135                 140
Gly Ser Lys Arg Ser Ser Ser Ser Arg Asn Arg Gly Pro His Gly Arg
145                 150                 155                 160
Ser Asn Gly Ala Ser Ser His Lys Pro Gly Ser Ser Ser Ser Ser Pro
                165                 170                 175
Arg Glu Lys Asp Leu Leu Ser Met Leu Cys Arg Asn Gln Leu Ser Pro
            180                 185                 190
Val Asn Ile His Pro Ser Tyr Ala Pro Ser Ser Pro Ser Ser Ser Asn
            195                 200                 205
Ser Gly Ser Tyr Lys Gly Ser Asp Cys Ser Pro Ile Met Arg Arg Ser
    210                 215                 220
Gly Arg Tyr Met Ser Cys Gly Glu Asn His Gly Val Arg Pro Pro Asn
225                 230                 235                 240
Pro Glu Gln Tyr Leu Thr Pro Leu Gln Gln Lys Glu Val Thr Val Arg
                245                 250                 255
His Leu Lys Thr Lys Leu Lys Glu Ser Glu Arg Arg Leu His Glu Arg
            260                 265                 270
Glu Ser Glu Ile Val Glu Leu Lys Ser Gln Leu Ala Arg Met Arg Glu
    275                 280                 285
Asp Trp Ile Glu Glu Glu Cys His Arg Val Glu Ala Gln Leu Ala Leu
290                 295                 300
Lys Glu Ala Arg Lys Glu Ile Lys Gln Leu Lys Gln Val Ile Glu Thr
305                 310                 315                 320
Met Arg Ser Ser Leu Ala Asp Lys Asp Lys Gly Ile Gln Lys Tyr Phe
                325                 330                 335
Val Asp Ile Asn Ile Gln Asn Lys Lys Leu Glu Ser Leu Leu Gln Ser
                340                 345                 350
Met Glu Met Ala His Ser Gly Ser Leu Arg Asp Glu Leu Cys Leu Asp
            355                 360                 365
Phe Pro Cys Asp Ser Pro Glu Lys Ser Leu Thr Leu Asn Pro Pro Leu
370                 375                 380
Asp Thr Met Ala Asp Gly Leu Ser Leu Glu Glu Gln Val Thr Gly Glu
```

```
385                 390                 395                 400
Gly Ala Asp Arg Glu Leu Leu Val Gly Asp Ser Ile Ala Asn Ser Thr
                405                     410                 415
Asp Leu Phe Asp Glu Ile Val Thr Ala Thr Thr Thr Glu Ser Gly Asp
            420                     425                 430
Leu Glu Leu Val His Ser Thr Pro Gly Ala Asn Val Leu Glu Leu Leu
            435                     440                 445
Pro Ile Val Met Gly Gln Glu Glu Gly Ser Val Val Val Glu Arg Ala
        450                     455                 460
Val Gln Thr Asp Val Val Pro Tyr Ser Pro Ala Ile Ser Glu Leu Ile
465                     470                     475                 480
Gln Ser Val Leu Gln Lys Leu Gln Asp Pro Cys Pro Ser Ser Leu Ala
                485                     490                 495
Ser Pro Asp Glu Ser Glu Pro Asp Ser Met Glu Ser Phe Pro Glu Ser
                500                     505                 510
Leu Ser Ala Leu Val Val Asp Leu Thr Pro Arg Asn Pro Asn Ser Ala
            515                     520                 525
Ile Leu Leu Ser Pro Val Glu Thr Pro Tyr Xaa Gln Cys Gly Cys Arg
            530                     535                 540
Ser Ser Cys Lys Pro Pro His Glu Arg Ala Gly Xaa Phe Ala Ala Cys
545                     550                     555                 560
Val Glu Glu Arg Leu Asp Gly Val Ile Pro Leu Ala Arg Gly Gly Val
                565                     570                 575
Val Arg Gln Tyr Trp Ser Ser Ser Phe Leu Val Asp Leu Leu Ala Val
                580                     585                 590
Ala Ala Pro Val Val Pro Thr Val Leu Trp Ala Phe Ser Thr Gln Arg
            595                     600                 605
Gly Gly Thr Asp Pro Val Tyr Asn Ile Gly Ala Leu Leu Arg Gly Cys
        610                     615                 620
Cys Val Val Ala Leu His Ser Leu Arg Arg Thr Ala Phe Arg Ile Lys
625                     630                     635                 640
Thr
```

```
<210> 4677
<211> 940
<212> DNA
<213> Homo sapiens

<400> 4677
nngcggctga gacagtgaag ttctctagag caaacttctc aggaggccgc gcactccggg
60
ttgggttcat acgccgcgtg atctgtccct ccgagaaggc ccgcctcact gtcttcttcc
120
tagaagctga ggttggggtt cgtactggga agaaatctgg catcgagttc aattccgcca
180
ataactgggc aagcatggct ttgttctcct tgatgttcat ggtccttttc agtaaagcat
240
ctgaactctc ctggctctca tcccgagagt catcctcaga ctcagaggta gaatcttccc
300
tttgtatcac ctgtctacac tctttctttc tttcaagaat tgtttttttc tcattctgta
360
aggtgcgcta gaaaacaact gctcggaaga actgttttta tctggtttgt tggccagctt
420
```

```
cttggtgggg aactgaaagg ctactcgaag accaatacta cttcttctag acctgcttct
480
tctaggggta gcttatcttc ttcttcatct tcctcttcct cgctcaccaa agatgctttg
540
ccatcatcac tcaaatctga ctccacgacc attacttctg ggttagtctt tccattcaga
600
tcactctgcg taaatcctgc aaaatcctca gtctctgagt cagtgtcctc tataaaaatt
660
cttcttagct cttctgtgaa gtatttggaa tgaaagcgca catcctgctg tttccctgac
720
tctagtgagt caaaactatc gcagctctcc tctgacgaga gggtttccat gggaacatca
780
tctcggaagc caacaaactc ttcatcatca ctgggggcgt taaagatgtc agccacttct
840
ttagggatct ggtagcgagt cgccaactcc attcttccta accgggctcc agtctcctcc
900
cagcacgcgg ccacgggagc ccggactcac cacggcccgg
940
```

```
<210> 4678
<211> 133
<212> PRT
<213> Homo sapiens
```

```
<400> 4678
Asn Leu Pro Phe Val Ser Pro Val Tyr Thr Leu Ser Phe Phe Gln Glu
1               5                  10                  15
Leu Phe Phe Ser His Ser Val Arg Cys Ala Arg Lys Gln Leu Leu Gly
            20                  25                  30
Arg Thr Val Phe Ile Trp Phe Val Gly Gln Leu Leu Gly Gly Glu Leu
            35                  40                  45
Lys Gly Tyr Ser Lys Thr Asn Thr Thr Ser Ser Arg Pro Ala Ser Ser
    50                  55                  60
Arg Gly Ser Leu Ser Ser Ser Ser Ser Ser Ser Ser Leu Thr Lys
65                  70                  75                  80
Asp Ala Leu Pro Ser Ser Leu Lys Ser Asp Ser Thr Thr Ile Thr Ser
                85                  90                  95
Gly Leu Val Phe Pro Phe Arg Ser Leu Cys Val Asn Pro Ala Lys Ser
                100                 105                 110
Ser Val Ser Glu Ser Val Ser Ser Ile Lys Ile Leu Leu Ser Ser Ser
        115                 120                 125
Val Lys Tyr Leu Glu
        130
```

```
<210> 4679
<211> 2284
<212> DNA
<213> Homo sapiens
```

```
<400> 4679
tttttttttt tttttttttt tttttttttt tttaccaca aaaacacttg tagagcctgt
60
ttattgcata actagcaggc acaaattcca aaacgatttt acaacactta aagggcacaa
120
```

taattacagg aatagaatgt acaataaaaa gtacagaata atgagtgaca gggatcaaac
180
acgttggaat aaaaggcatc tcagttttcc tatgcagcat tttcttttct aggaacacgt
240
taccttcaac caggacaagg aaagaaagaa aactatacta ttggaaagct catgggtgcc
300
attgaggaca aaaacaggcg agttttgctc ttggttctgc aactgaatca cttgagaagc
360
cgtgcacagc tcccgagttg tgcgtttaga attctgatta catgaaatgc tgtgtttgat
420
ctttgggccc aattcactgt tctttggcaa ataagaacta tttgcattcc aaggcagatg
480
acgatttctg tgaaaggagc ttagaggtac agctgtttcc ttctgttcag tcaagtgcca
540
gtttcataaa gtgcacctct gccctatcag ctttggggga agggtggcat atggggagga
600
agggatcatt gagaatacag ggtgaaaaag aacgacgtta ctgaaggtag acattgctag
660
tgcaaggtac ggaatccatg tgcaaaaggt ggctggaaca aatgttcaga taaggtgcga
720
tttgccaaca ggagcagaga actctgacac cagatctcag atgaggccaa ggaaatgcgc
780
ggggcacata cagagaggac gacctgcagc cctccaatgg ccacgtcatt ccaccgggga
840
acttgtttgg agttttggca ccgtgggcta accgagcact cttctgacat attcttacaa
900
ctggaaatgc tttgttggtc cccatgttcc ttgactttct ctagggccat aaaggcaaca
960
tcttctattg caggtcctca aacattccaa ggaaaacact gcttcacctc ctgcagacag
1020
ctcatttccc agaagcctct acagaagccc gtcctccctg ggacagcagg ggcaggggtt
1080
tgcaagataa aggagggtca gctaaggaca tgaagcctgc agaaaaggct atcagatggc
1140
gcctgaactt aaggtgggag gcccccttct agaaggcatc ccgggagcat ccaacagcaa
1200
tgtggcactt agggctgtgg acaaacaag tggaagagtc ttttggagac gtggaccctt
1260
ttcccatgct actcacagtg aagcaaaatg cgacaaaagc atccacacac ggtgacttag
1320
taaagcaagc accgtcgggg tgctactttc atgacagcat atggtcaagc tataaaggtg
1380
tgcatcgatc agtcctgtga aaatagaagc ttagttatta gcatgtattg aggcaacttg
1440
tactttgatt cttgtgtctt cttcacatgt gtgaatgact gctatgggac agaacatatg
1500
gttaaaaaca ggagcgacag caacataaca cacagggttg gccggctcca ttacgggtaa
1560
gactcagagg ctgctccagg tgtgtccggg gaagccaggc cctcacactg cacagcttac
1620
agggccctgg ggtgggggct gtgagctggc agcctagagg acacagctca cctgcacatg
1680
gtctctgaaa gtgttcaaat tggttgccaa catttataaa tggagagatg gcaccaaaaa
1740

```
acatctaggt ttcttgtctc ttgaaaaatc aaagctgtgg ccaccctagg cccacttttc
1800
cacatggcaa caggcgtgga gctggggggct actgcccccta ctgtgtaggc ggtgggctcc
1860
ccatagtctc ctctgccctg ctgccgtgta cctggctccc ttcactcatc cacatcaccg
1920
gccctaggcc agggtctgaa ccacacacac agaatggctg cagtaagcag gaacgggaag
1980
agctttcaca ttcagaacaa gaaggggctt ttgagtaact aaaaaacaat ctgagcatgt
2040
tccagcactt caaccttact ctttcagagc tttggggtag caggcagcca gctagagcac
2100
actctctaag gaactcttga aagttgatgt ctaatttttta agtactcatg aggtgatgga
2160
ggagaaacta actcagatga ctgcgatacg atacatcttt ccttataaga agtccttaaa
2220
gatgatgaaa aatgtgaagc aactcatgtg agaaagctgt aagtggtcag agaagcaagc
2280
tgac
2284


<210> 4680
<211> 112
<212> PRT
<213> Homo sapiens

<400> 4680
Met Arg Gly Ala His Thr Glu Arg Thr Thr Cys Ser Pro Pro Met Ala
1               5               10              15
Thr Ser Phe His Arg Gly Thr Cys Leu Glu Phe Trp His Arg Gly Leu
            20              25              30
Thr Glu His Ser Ser Asp Ile Phe Leu Gln Leu Glu Met Leu Cys Trp
        35              40              45
Ser Pro Cys Ser Leu Thr Phe Ser Arg Ala Ile Lys Ala Thr Ser Ser
    50              55              60
Ile Ala Gly Pro Gln Thr Phe Gln Gly Lys His Cys Phe Thr Ser Cys
65              70              75              80
Arg Gln Leu Ile Ser Gln Lys Pro Leu Gln Lys Pro Val Leu Pro Gly
                85              90              95
Thr Ala Gly Ala Gly Val Cys Lys Ile Lys Glu Gly Gln Leu Arg Thr
            100             105             110


<210> 4681
<211> 906
<212> DNA
<213> Homo sapiens

<400> 4681
tttttttttt tttttttttt gcaaatggtt tttttttttt tttttttttcc acattratat
60
cacaaggtgt ccacttactg gaccaaatag caaagttgct cccttctgcg tcctgagaac
120
acagaagtct aggtactgta cattcactaa ggctccttgt ttttgcaaat cgcgtttatg
180
```

```
acaaataacc ataaggcaaa cgaatctaaa ggaatggtta tgagtgtttc cagcgtacag
240
acaggtcttc cccctcgccc cacagtacag cataaaacca gtagcaccca caataacttt
300
tgtgttgttt tggggggact ctagaaaggt gaagttttct agatgtgtac aggaagggaa
360
aaaagaaaag ggaggaagaa aggaaaggtt ttttgtctg gtggtctgat ggaagaggaa
420
ttgtttaaaa taaacatgag aaaacttaaa tttttgcagc atttctttaa aaactgggtt
480
ataactgaaa ccagatataa acaggtggct gcccatggag tgtgggtcac actggctggc
540
cagctggccc gcctgcccaa tgccagtggc tcaccacagc tgagaagctt ctggcacatg
600
acagacaaca ctggcctgac agtggctggg tagggagcaa acagaggcag tggcatggcc
660
cactgtctca agacactcag ggccaaatta agaacagaa aatgcaagag agatgagatg
720
cgtgcttctg ttgctgtgtt aaaggtgacc tctcccacag gtttctgtg cctgcctgca
780
actgaggccc cagctttcag gtgctggaaa gtgtccgcac ctctttgggg gtgagggact
840
aacgctttt atagctggtt tgctatagag ttctgaactc actttgccgt ccttccctcc
900
acgcgt
906
```

<210> 4682
<211> 153
<212> PRT
<213> Homo sapiens

<400> 4682
```
Met Gly Ser His Leu Phe Ile Ser Gly Phe Ser Tyr Asn Pro Val Phe
1               5                   10                  15
Lys Glu Met Leu Gln Lys Phe Lys Phe Ser His Val Tyr Phe Lys Gln
            20                  25                  30
Phe Leu Phe His Gln Thr Thr Arg Gln Lys Asn Leu Ser Phe Leu Pro
            35                  40                  45
Pro Phe Ser Phe Phe Pro Ser Cys Thr His Leu Glu Asn Phe Thr Phe
        50                  55                  60
Leu Glu Ser Pro Gln Asn Asn Thr Lys Val Ile Val Gly Ala Thr Gly
65                  70                  75                  80
Phe Met Leu Tyr Cys Gly Ala Arg Gly Lys Thr Cys Leu Tyr Ala Gly
                85                  90                  95
Asn Thr His Asn His Ser Phe Arg Phe Val Cys Leu Met Val Ile Cys
                100                 105                 110
His Lys Arg Asp Leu Gln Lys Gln Gly Ala Leu Val Asn Val Gln Tyr
            115                 120                 125
Leu Asp Phe Cys Val Leu Arg Thr Gln Lys Gly Ala Thr Leu Leu Phe
            130                 135                 140
Gly Pro Val Ser Gly His Leu Val Ile
145                 150
```

<210> 4683
<211> 3246
<212> DNA
<213> Homo sapiens

<400> 4683
nctcctgcct ccctgcaggg agctgcttat gggacaccgc ttcctgcgcg gcctcttaac
60
gctgctgctg ccgccgccac ccctgtatac ccggcaccgc atgctcggtc cagagtccgt
120
cccgccccca aaacgatccc gcagcaaact catggcaccg cccgaatcgg gacgcacaat
180
ggcaccttcc actgcgacga ggcactggca tgcgcactgc ttcgcctcct gccggagtac
240
cgggatgcag agattgtgcg gacccgggat cccgaaaaac tcgcttcctg tgacatcgtg
300
gtggacgtgg ggggcgagta cgaccctcgg agacaccgat atgaccatca ccagaggtct
360
ttcacagaga ccatgagctc cctgtcccct gggaagccgt ggcagaccaa gctgagcagt
420
gcgggactca tctatctgca cttcgggcac aagctgctgg cccagttgct gggcactagt
480
gaagaggaca gcatggtggg caccctctat gacaagatgt atgagaactt tgtggaggag
540
gtggatgctg tggacaatgg gatctcccag tgggcagagg gggagcctcg atatgcactg
600
accactaccc tgagtgcacg agttgctcga cttaatccta cctggaacca ccccgaccaa
660
gacactgagg cagggttcaa gcgtgcaatg gatctggttc aagaggagtt tctgcagaga
720
ttagatttct accaacacag ctggctgcca gcccgggcct tggtggaaga ggcccttgcc
780
cagcgattcc aggtggaccc aagtggagag attgtggaac tggcgaaagg tgcatgtccc
840
tggaaggagc atctctacca cctggaatct gggctgtccc ctccagtggc catcttcttt
900
gttatctaca ctgaccaggc tggacagtgg cgaatacagt gtgtgcccaa ggagccccac
960
tcattccaaa gccggctgcc cctgccagag ccatggcggg gtcttcggga cgaggccctg
1020
gaccaggtca gtgggatccc tggctgcatc ttcgtccatg caagcggctt cattggcggt
1080
caccgcaccc gagagggtgc cttgagcatg gcccgtgcca ccttggccca gcgctcatac
1140
ctcccacaaa tctcctagtc taataaaacc ttccatctca tactgaccca gtccttgact
1200
tattcttgcc ctacaccatt ccagaaactt gtgaaaagtg aaacaactat ttatgtgtaa
1260
gaccctgtgc tagatatatt ttcttcacag taacttctca gccttgcttc ccaaatcatt
1320
tgaaaccaca gtttctagga ttaaataacg tgaccaaatt cacaagtggc taaaaagtga
1380
cagaacaggg ccttaaccca aagtccatgc ttttttcccc tactgtaccc cactgcaact
1440

```
ccctggaaaa gacagactgg taactgagtg gaaaacaaaa ggaaaactta tttattctta
1500
gaggtgggaa tgtggggagt ggggcagaac aggtggtggc cctgggagag ggtcccaagg
1560
ggcagaggtt ggggatgtct cagtaaagag gggcaggtca tgaatagagc ctccaccccc
1620
agcagggggt tcctgggccc gcccaagcac tgggctaaaa cgtggaaact gggcattgac
1680
aaagtacagc gggatgtggg caattcggcc tgtggaccag cccacactga gcagggcccc
1740
tttgttgaag gaaggatgga aagtgatgag ctggggctgg gctcctggct cccctggat
1800
aatgccacag ggaaggagct caaacacagg gctgtttcga gtgcgaaaaa ggaggatgac
1860
tggtttacca tcctgtaccc ttggctttcc tttcataagc acagccagac gttccccact
1920
ggggtcccag accatggagt gagcctctcc cccaagcctc tcctcaccat ctggtgtctg
1980
tattgttgtc tcagacagat ctgccacaat cgttgctgac tttgcacctc caacgcaccc
2040
ctttccctca ccacaacgtt ctggaaaaga cagggagtaa atcagtggct ctcccaatac
2100
agtgaacagc agtcggctgc catctgggct ccagcagcca gtctgacagc gccctgatag
2160
agtaggccac ctctcacaag tccacatctg ggcctcccag actcgaaaga cagctgaagg
2220
agtggtagcc aggattttgc tgccgtctgg ggaccagagc aggttggtca ccccacctcc
2280
tcgaaaccag ggaaggggga cacaggtctc tgttgagaca tcccataccc ggatagcagc
2340
atccacgggt gaagctgaga gcagccgccc cccactgggg gcccaggcca agctggtaac
2400
aggtgtatgc ccagggtgag acagcacttg ggcacagcca gaagagggtc gggtagacaa
2460
ggaggtaggg tccagggtcc agataagaat gcagctctgg caggccacag ccaagacaga
2520
ggcactaagg ggcttccagg ccagagacgc cacatttcgc tgcagccggt gcttcaggga
2580
ggggactatg gtgctgctgg cattatacac acggactgag tcatctagca gggccactgc
2640
aaacttgttg gtgtgggggt ggcatgcaaa gacacgcaag cagcagctgg accaatttgt
2700
gacttgggca aattcagcga tcagatcttc gctcctgaga gacagatggg ggaacaggga
2760
cccatggagg gaagaggccc atcgacagag tgccagggcc cagccggatg ccgtcttcac
2820
ccactcaaac acctcttctt ctgagtttgc aatttcattt agcaccccaa aaaggcccac
2880
atcacgccaa atgttgatgc atctcttcca cacttgctcc cggtgatgga tgaaggcagt
2940
tcttgtgcca tggtccagcc ttccaggggt ctttagggga tcctttgtca gttgtaggac
3000
aggaagattg atccactggc cccggaagtc ggggggcggg ctctcatagc tactgcccgt
3060
```

3874

caccagctcg ttattgtgct catatagggt gacttgaccc cgaggcggtg gaggagggaa
3120
caaccccaga gagcacatct tgccggttcg caggacgtct gcagtcggca aactcctggc
3180
cggaacggca cagaccgcac tcccgcaact cggttcccgg gctagattcg tatgcggacg
3240
ggtacc
3246

<210> 4684
<211> 385
<212> PRT
<213> Homo sapiens

<400> 4684
Xaa Pro Ala Ser Leu Gln Gly Ala Ala Tyr Gly Thr Pro Leu Pro Ala
1   5   10   15
Arg Pro Leu Asn Ala Ala Ala Ala Ala Ala Thr Pro Val Tyr Pro Ala
            20   25   30
Pro His Ala Arg Ser Arg Val Arg Pro Ala Pro Lys Thr Ile Pro Gln
        35   40   45
Gln Thr His Gly Thr Ala Arg Ile Gly Thr His Asn Gly Thr Phe His
    50   55   60
Cys Asp Glu Ala Leu Ala Cys Ala Leu Leu Arg Leu Leu Pro Glu Tyr
65   70   75   80
Arg Asp Ala Glu Ile Val Arg Thr Arg Asp Pro Glu Lys Leu Ala Ser
                85   90   95
Cys Asp Ile Val Val Asp Val Gly Gly Glu Tyr Asp Pro Arg Arg His
                100   105   110
Arg Tyr Asp His His Gln Arg Ser Phe Thr Glu Thr Met Ser Ser Leu
        115   120   125
Ser Pro Gly Lys Pro Trp Gln Thr Lys Leu Ser Ser Ala Gly Leu Ile
        130   135   140
Tyr Leu His Phe Gly His Lys Leu Leu Ala Gln Leu Leu Gly Thr Ser
145   150   155   160
Glu Glu Asp Ser Met Val Gly Thr Leu Tyr Asp Lys Met Tyr Glu Asn
                165   170   175
Phe Val Glu Glu Val Asp Ala Val Asp Asn Gly Ile Ser Gln Trp Ala
                180   185   190
Glu Gly Glu Pro Arg Tyr Ala Leu Thr Thr Thr Leu Ser Ala Arg Val
        195   200   205
Ala Arg Leu Asn Pro Thr Trp Asn His Pro Asp Gln Asp Thr Glu Ala
        210   215   220
Gly Phe Lys Arg Ala Met Asp Leu Val Gln Glu Glu Phe Leu Gln Arg
225   230   235   240
Leu Asp Phe Tyr Gln His Ser Trp Leu Pro Ala Arg Ala Leu Val Glu
                245   250   255
Glu Ala Leu Ala Gln Arg Phe Gln Val Asp Pro Ser Gly Glu Ile Val
            260   265   270
Glu Leu Ala Lys Gly Ala Cys Pro Trp Lys Glu His Leu Tyr His Leu
        275   280   285
Glu Ser Gly Leu Ser Pro Pro Val Ala Ile Phe Phe Val Ile Tyr Thr
    290   295   300
Asp Gln Ala Gly Gln Trp Arg Ile Gln Cys Val Pro Lys Glu Pro His

```
305                    310                    315                    320
Ser Phe Gln Ser Arg Leu Pro Leu Pro Glu Pro Trp Arg Gly Leu Arg
            325                    330                    335
Asp Glu Ala Leu Asp Gln Val Ser Gly Ile Pro Gly Cys Ile Phe Val
        340                    345                    350
His Ala Ser Gly Phe Ile Gly Gly His Arg Thr Arg Glu Gly Ala Leu
    355                    360                    365
Ser Met Ala Arg Ala Thr Leu Ala Gln Arg Ser Tyr Leu Pro Gln Ile
    370                    375                    380
Ser
385
```

```
<210> 4685
<211> 618
<212> DNA
<213> Homo sapiens

<400> 4685
nntgtgatgg gcgtgcaggt ggtgggcagg gcctttgcac gggccttgcg gcaggagttt
60
gcagcctcta cccccctaaaa aggaaaccac tcctggagaa gaggcagctc ctagccacct
120
gtccctgtgt ctctcatcct gtgctggtgg caggggtgag ccaccaactc ggaaggccca
180
gggtgaagtg tgggctgctg aggactgagc gatcacccac atgtccacac agccagccgg
240
gccgcagctg atgcccgagg acgcgctgga caccggtctg cagccgcttc caacctctcc
300
ggcctcagcc tccaggaggc acagcagatt ctcaacgtgt ccaagctgag ccctgaggag
360
gtccagaaga actatgaaca cttatttaag gtgaatgata aatccgtggg tggctccttc
420
tacctgcagt caaaggtggt ccgcgcaaag gagcgcctgg atgaggaact caaaatccag
480
gcccaggagg acagagaaaa agggcagatg ccccatacgt gactgctcgg ctcccccgc
540
ccacccgcc gcctctaatt tatagcttgg taataaattt cttttctgca aaaaaagag
600
gctggagtgt gctcgcga
618
```

```
<210> 4686
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4686
Gly Leu Ser Asp His Pro His Val His Thr Ala Ser Arg Ala Ala Ala
1               5                   10                  15
Asp Ala Arg Gly Arg Ala Gly His Arg Ser Ala Ala Ala Ser Asn Leu
            20                  25                  30
Ser Gly Leu Ser Leu Gln Glu Ala Gln Gln Ile Leu Asn Val Ser Lys
        35                  40                  45
Leu Ser Pro Glu Glu Val Gln Lys Asn Tyr Glu His Leu Phe Lys Val
```

3876

```
        50                    55                    60
Asn Asp Lys Ser Val Gly Gly Ser Phe Tyr Leu Gln Ser Lys Val Val
65                    70                    75                    80
Arg Ala Lys Glu Arg Leu Asp Glu Glu Leu Lys Ile Gln Ala Gln Glu
                85                    90                    95
Asp Arg Glu Lys Gly Gln Met Pro His Thr
                100                   105
```

```
<210> 4687
<211> 309
<212> DNA
<213> Homo sapiens
```

```
<400> 4687
acgcgtcggg gctgagccgg ggtccagcag ccgccgctat ggacatcccg ccgctggccg
60
gcaagatcgc ggcgctgtcg ctgagcgccc tcccggtgtc ctacgcgctc aaccacgtct
120
cggcgctctc gcaccccctg tgggtggcat tgatgagcgc cctaatcctg ggtctgcttt
180
tcgtggcggt ctacagcttg tcccatggcg aggtctccta tgacccactc tatgctggct
240
tcgctgtctt cgccttcacc tcgggtgggg acctcatcat cgctcttcag gaagacagct
300
atggggggg
309
```

```
<210> 4688
<211> 90
<212> PRT
<213> Homo sapiens
```

```
<400> 4688
Met Asp Ile Pro Pro Leu Ala Gly Lys Ile Ala Ala Leu Ser Leu Ser
1               5                   10                  15
Ala Leu Pro Val Ser Tyr Ala Leu Asn His Val Ser Ala Leu Ser His
                20                  25                  30
Pro Leu Trp Val Ala Leu Met Ser Ala Leu Ile Leu Gly Leu Leu Phe
            35                  40                  45
Val Ala Val Tyr Ser Leu Ser His Gly Glu Val Ser Tyr Asp Pro Leu
        50                  55                  60
Tyr Ala Gly Phe Ala Val Phe Ala Phe Thr Ser Gly Gly Asp Leu Ile
65                  70                  75                  80
Ile Ala Leu Gln Glu Asp Ser Tyr Gly Gly
                85                  90
```

```
<210> 4689
<211> 898
<212> DNA
<213> Homo sapiens
```

```
<400> 4689
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60
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120
ctgctggaca gctcagccag cgtctctcac tacgagttct cccgggttcg ggagtttgtg
180
gggcagctgg tggctccact gcccctggca ccgnnggccc tgcgtgccag tctggtgcac
240
gtgggcagtc ggccatacac cgagttcccc ttcggccagc acagctcggg tgaggctgcc
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480
ctcaaggacc tgggcgtcac cgtgttcatt gtcagcaccg gccgaggcaa cttcctggag
540
ctgtcagccg ctgcctcagc ccctgccgag aagcacctgc actttgtgga cgtggatgac
600
ctgcacatca ttgtccaaga gctgaggggc tccattctcg acgcgatgcg gccacagcag
660
ctccatgcca cggagatcac gtccagcggc ttccgcctgg cctggccacc cctgctgacc
720
gcagactcgg ctactatgt gctggagctg gtgcccagcg cccagccggg ggctgcaaga
780
cgccagcagc tgccagggaa cgccacggac tggatctggg ccggcctcga cccggacacg
840
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898

<210> 4690
<211> 299
<212> PRT
<213> Homo sapiens

<400> 4690
Xaa Pro Arg Pro Ser Arg Arg Ile Ala Pro Leu Asp Gly Ala Arg Leu
1   5   10   15
Ala Leu Ser Leu Arg Trp Arg Trp Arg Thr Pro Asp Cys Pro Pro Ala
            20   25   30
Ser Ala Pro Glu Asp Leu Met Phe Leu Leu Asp Ser Ser Ala Ser Val
        35   40   45
Ser His Tyr Glu Phe Ser Arg Val Arg Glu Phe Val Gly Gln Leu Val
    50   55   60
Ala Pro Leu Pro Leu Ala Pro Xaa Ala Leu Arg Ala Ser Leu Val His
65   70   75   80
Val Gly Ser Arg Pro Tyr Thr Glu Phe Pro Phe Gly Gln His Ser Ser
                85   90   95
Gly Glu Ala Ala Gln Asp Ala Val Arg Ala Ser Ala Gln Arg Met Gly
            100   105   110
Asp Thr His Thr Gly Leu Ala Leu Val Tyr Ala Lys Glu Gln Leu Phe
        115   120   125
Ala Glu Ala Ser Gly Ala Arg Pro Gly Val Pro Lys Val Leu Val Trp
    130   135   140
Val Thr Asp Gly Gly Ser Ser Asp Pro Val Gly Pro Pro Met Gln Glu

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```
145                     150                155                160
Leu Lys Asp Leu Gly Val Thr Val Phe Ile Val Ser Thr Gly Arg Gly
                         165                 170                 175
Asn Phe Leu Glu Leu Ser Ala Ala Ala Ser Ala Pro Ala Glu Lys His
             180                 185                 190
Leu His Phe Val Asp Val Asp Asp Leu His Ile Ile Val Gln Glu Leu
         195                 200                 205
Arg Gly Ser Ile Leu Asp Ala Met Arg Pro Gln Gln Leu His Ala Thr
     210                 215                 220
Glu Ile Thr Ser Ser Gly Phe Arg Leu Ala Trp Pro Pro Leu Leu Thr
225                 230                 235                 240
Ala Asp Ser Gly Tyr Tyr Val Leu Glu Leu Val Pro Ser Ala Gln Pro
                 245                 250                 255
Gly Ala Ala Arg Arg Gln Gln Leu Pro Gly Asn Ala Thr Asp Trp Ile
             260                 265                 270
Trp Ala Gly Leu Asp Pro Asp Thr Asp Tyr Asp Val Ala Leu Val Pro
         275                 280                 285
Glu Ser Asn Val Arg Leu Leu Arg Pro Gln Ile
     290                 295
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<210> 4691
<211> 2375
<212> DNA
<213> Homo sapiens

<400> 4691
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120
ccaaatgctc ctatctggct catactcaat gaagctggac tatactggag agcagtagga
180
aatagcactt ttgctattgc ctgtcttcag agggctttga atttagctcc acttcaatac
240
caagatgttc ctcttgtcaa cttggccaac cttttgattc attacggcct tcatcttgat
300
gccactaagc tgctacttca agctttggcc atcaatagct ctgagcctct gacctttttg
360
agcctgggaa atgcttacct tgctctgaag aatatcagtg gggcacttga ggcctttaga
420
caggccttga aattaaccac caaatgtcca gagtgtgaaa acagcctgaa gttgatccgc
480
tgtatgcagt tttatccttt tctgtacaac atcacttctt ctgtttgcag tggtaattgt
540
catgagaaaa ccctggacaa cagccatgac aaacagaaat attttgacaa ctcacagtca
600
ctggatgctg ctgaagaaga gccctctgag agaggaacag aggaggaccc tgtattctct
660
gttgagaatt cagggaggga ctcagatgcc cttagacttg aaagtacggt ggttgaggag
720
agcaatggtt ctgatgagat ggagaattca gatgaaacca aaatgtcaga agaaatactg
780
gctttggtgg atgaatttca acaggcatgg cctttggaag gctttggggg tgcactagag
840
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atgaaagggc ggcgtctaga cttacaagga atacgggtgc tgaagaaagg tccccaggat
900
ggagtggcca gaagctcttg ctatggagac tgcagaagtg aagatgatga agcaacagaa
960
tggattacat tccaggtcaa acgtgtaaag aaacccaaag gagatcataa gaaaactcct
1020
gggaaaaaag tagaaacagg tcagatagaa aatggacatc gttaccaagc aaacctagag
1080
atcactggcc ccaaggtggc atctcctggg ccacaagggc tactagactg gaagaccagg
1140
aaagtgccat agacataatg taactggatt tcagcaaggc atttaacaga gcctcttatg
1200
atatccttgt gaaccagatg gagagatgtg ggcttgaagc cttcccattg cctacaggat
1260
aaaattcaaa cttcctagtg tggtgtacaa dacccttttac agcccgcctc tgtgtaccct
1320
tcaacaccat tctctgaacc aaccatgctc atgttttttac ctcagtgcct ttgcacatgc
1380
tattccctct gcctggaatg ccctgtgccc cctctgccct ctgccgtgct aaaatatcac
1440
tcatccttaa acttcaaaat caagtgccat ctcttccttg ttaccttcag gcagaattaa
1500
ttactctttc ctctgtgcaa ttgttctata tcttcgctct agctcttttc ctgttgtatt
1560
gtaatgattt gtttatgttt accttcctta ctagactgtg agctcaagag caggccgtct
1620
taattattcc tttctgtacc cctagtgtct tttatggttc tcagcccctt ataacaggtg
1680
ctcaataaat atttttcaaa tgaaattatt aaatgtaaaa gaaaattaag attttttgtg
1740
aaaattatgg cttatttaag ttattaattt aaacagagtt aatttgaaac tcttccaaaa
1800
ctgttccttt ctgttttgtt aaaatctcaa tctaaacccc tgcctgtacc tcaaacagtt
1860
ttctactgtt cgtaaattcc tataatataa aaagcgctat acagaactaa agttctcctt
1920
cctgcctatt ccattataac tccttcagaa aacccttccc agacaagaca gttctgctct
1980
tttcttgggg gatttgatgt aagtaaaggg cccacaccca aaaggtgggt acttacgaag
2040
gatattaata aacagagctt taaatttttt tgtagcttta aatagcttgt tgattgggaa
2100
catacacgtt agagtcaaac agactcctag tctgccagtt gctagccagg tgacctggac
2160
aagtcactta gtctctctga gtctctgttt tctcatctga gaaatgaggg ttaaaaccta
2220
cttcaggcca gatgcagtgg ctcacatctg taatcccagc actttgggag gccaggtgg
2280
gaggatcact tgagtccagg aggttaaggc tccagaaagc tagtatcatc cacggactct
2340
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2375
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<210> 4692

<211> 383
<212> PRT
<213> Homo sapiens

<400> 4692
Xaa Asp Leu Lys Ala Lys Met Pro Asp Asp His Ala Arg Lys Ile Leu
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Leu Ser Arg Ile Asn Asn Tyr Thr Ile Pro Glu Glu Glu Ile Gly Ser
            20   25   30
Phe Leu Phe His Ala Ile Asn Lys Pro Asn Ala Pro Ile Trp Leu Ile
        35   40   45
Leu Asn Glu Ala Gly Leu Tyr Trp Arg Ala Val Gly Asn Ser Thr Phe
        50   55   60
Ala Ile Ala Cys Leu Gln Arg Ala Leu Asn Leu Ala Pro Leu Gln Tyr
65   70   75   80
Gln Asp Val Pro Leu Val Asn Leu Ala Asn Leu Leu Ile His Tyr Gly
                85   90   95
Leu His Leu Asp Ala Thr Lys Leu Leu Leu Gln Ala Leu Ala Ile Asn
            100   105   110
Ser Ser Glu Pro Leu Thr Phe Leu Ser Leu Gly Asn Ala Tyr Leu Ala
        115   120   125
Leu Lys Asn Ile Ser Gly Ala Leu Glu Ala Phe Arg Gln Ala Leu Lys
    130   135   140
Leu Thr Thr Lys Cys Pro Glu Cys Glu Asn Ser Leu Lys Leu Ile Arg
145   150   155   160
Cys Met Gln Phe Tyr Pro Phe Leu Tyr Asn Ile Thr Ser Ser Val Cys
                165   170   175
Ser Gly Asn Cys His Glu Lys Thr Leu Asp Asn Ser His Asp Lys Gln
            180   185   190
Lys Tyr Phe Asp Asn Ser Gln Ser Leu Asp Ala Ala Glu Glu Glu Pro
        195   200   205
Ser Glu Arg Gly Thr Glu Glu Asp Pro Val Phe Ser Val Glu Asn Ser
    210   215   220
Gly Arg Asp Ser Asp Ala Leu Arg Leu Glu Ser Thr Val Val Glu Glu
225   230   235   240
Ser Asn Gly Ser Asp Glu Met Glu Asn Ser Asp Glu Thr Lys Met Ser
                245   250   255
Glu Glu Ile Leu Ala Leu Val Asp Glu Phe Gln Gln Ala Trp Pro Leu
            260   265   270
Glu Gly Phe Gly Gly Ala Leu Glu Met Lys Gly Arg Arg Leu Asp Leu
        275   280   285
Gln Gly Ile Arg Val Leu Lys Lys Gly Pro Gln Asp Gly Val Ala Arg
    290   295   300
Ser Ser Cys Tyr Gly Asp Cys Arg Ser Glu Asp Asp Glu Ala Thr Glu
305   310   315   320
Trp Ile Thr Phe Gln Val Lys Arg Val Lys Lys Pro Lys Gly Asp His
                325   330   335
Lys Lys Thr Pro Gly Lys Lys Val Glu Thr Gly Gln Ile Glu Asn Gly
            340   345   350
His Arg Tyr Gln Ala Asn Leu Glu Ile Thr Gly Pro Lys Val Ala Ser
        355   360   365
Pro Gly Pro Gln Gly Leu Leu Asp Trp Lys Thr Arg Lys Val Pro
    370   375   380

<210> 4693
<211> 794
<212> DNA
<213> Homo sapiens

<400> 4693
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120
agcttaagga cctggcattt ctcaagaacc agctggaaag cctgcagcgg cgtgtagaag
180
acgaagtcaa cagtggagtg ggccaggatg gctcgctgtt gtcctccccg ttcctcaagg
240
gattcctggc tggctatgtg gtggccaaac tgagggcatc agcagtattg ggctttgctg
300
tgggcacctg cactggcatc tatgcggctc aggcatatgc tgtgcccaac gtggagaaga
360
cattaaggga ctatttgcag ttgctacgca aggggcccga ctagctctag gtgccatgga
420
agaggcagga tgagcagctc agccttcagg tggagacact ttatctggat tccccagctg
480
tcatccattt gctatctcca actttcctgc caccttcatc cttgcctccc ttcctgcaga
540
ttgtggacag tagttcctca gcctgcaccc tggattcctt cttcccttc ctagctccat
600
gggactcgcc ccaagactgt ggcttcaagg accaccagcc ccttactctt caagccctga
660
ctgtggagtt ggtagatgcc tctgatcctc agtattctct ctggcaatgt ccacggcttt
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780
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794

<210> 4694
<211> 103
<212> PRT
<213> Homo sapiens

<400> 4694
Met Ala Asp Asp Lys Asp Ser Leu Pro Lys Leu Lys Asp Leu Ala Phe
1   5   10   15
Leu Lys Asn Gln Leu Glu Ser Leu Gln Arg Arg Val Glu Asp Glu Val
            20   25   30
Asn Ser Gly Val Gly Gln Asp Gly Ser Leu Leu Ser Ser Pro Phe Leu
            35   40   45
Lys Gly Phe Leu Ala Gly Tyr Val Val Ala Lys Leu Arg Ala Ser Ala
        50   55   60
Val Leu Gly Phe Ala Val Gly Thr Cys Thr Gly Ile Tyr Ala Ala Gln
65   70   75   80
Ala Tyr Ala Val Pro Asn Val Glu Lys Thr Leu Arg Asp Tyr Leu Gln
                85   90   95
Leu Leu Arg Lys Gly Pro Asp

3882

100

<210> 4695
<211> 2209
<212> DNA
<213> Homo sapiens

<400> 4695
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gaatacaccc ttctttcaac ggctattcaa agatcacctg gctgcaaagc tttctttcct
120
cgcctgtgct tcctccttaa ctatctctag ttaaagctat ctccaccacc aggccacaag
180
ctcccagaga acagagatcg tgttttcat tattctgtcc atttccatcc cccactcccg
240
cccacttact gtgtgagtcc agcactgtgt gagtccttga taaaaacgat gagcaaatcc
300
ccaggccttg agtgggtcag cagtgaccac atctatccgc agggatccac ggggaagctg
360
gtgtgcgccg gataaaggta ggtggtccct ctggcacagg ccgccctaag gccaaggccc
420
cccagatgca gctcattcct ggctccctct gacagatggc aaccgccgat gagattgtga
480
aactcatgct cgaccacatg acaaacacca ccaacgcgtc ccatgtgcct gtgcagcccg
540
gtgggtagcc tctcgcccgc gtctcccaac ccctcctaca cctctgggga ggagacgccc
600
agagggtctc acctggggtg tcatgtctac ccgcaggctc ctcagttgtg atgatggtca
660
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720
ccctggggaa cgtggtcatt tgtgggtta ttgagggatg cctgccagga ggaaatcagg
780
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900
ggggtgaaga ttgcccgtgc cctggtgggc accttcatgt cagcactgga gatgcctggc
960
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1020
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1080
gtagcccctg ccgagcccca ggaggcccct gattccactg ctgcanngga ggctcagcct
1140
cgaagcngga tggcgctggt gctggaacgg gtgtgcagca ctctcctggg cctggaggaa
1200
cacctgaatg ccctggaccg ggctgctggt gacggcgact gtggcaccac ccacagccgt
1260
gcggccagag caatccagga gtggctgaag gagggcccac cccctgccag ccctgcccag
1320
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1380

tatggcctgt tcctgactgc ggctgcacag cccctgaagg ccaagaccag cctcccagcc
1440
tggtctgctg ccatggatgc cggcctggaa gccatgcaga agtatggcaa ggctgctcca
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1560
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1920
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1980
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2040
tcctcctgca gcgtccctgg ttccaaaccc accttcgagc tctcagccga cgaggtggag
2100
ctgggcctgg ggatccacgg ggaagctggt gtgcgccgga taaagatggc aaccgccgat
2160
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2209

<210> 4696
<211> 302
<212> PRT
<213> Homo sapiens

<400> 4696
Cys Pro Phe Phe Pro Phe Gly Leu Pro His Ser Gly Ile Ala Glu Gly
1   5   10   15
Arg Gly Val Lys Ile Ala Arg Ala Leu Val Gly Thr Phe Met Ser Ala
            20   25   30
Leu Glu Met Pro Gly Ile Ser Leu Thr Leu Leu Leu Val Asp Glu Pro
        35   40   45
Leu Leu Lys Leu Ile Asp Ala Glu Thr Thr Ala Ala Ala Trp Pro Asn
    50   55   60
Val Ala Ala Val Ser Ile Thr Gly Arg Lys Arg Ser Arg Val Ala Pro
65   70   75   80
Ala Glu Pro Gln Glu Ala Pro Asp Ser Thr Ala Ala Xaa Glu Ala Gln
                85   90   95
Pro Arg Ser Xaa Met Ala Leu Val Leu Glu Arg Val Cys Ser Thr Leu
            100   105   110
Leu Gly Leu Glu Glu His Leu Asn Ala Leu Asp Arg Ala Ala Gly Asp
        115   120   125
Gly Asp Cys Gly Thr Thr His Ser Arg Ala Ala Arg Ala Ile Gln Glu
    130   135   140
Trp Leu Lys Glu Gly Pro Pro Pro Ala Ser Pro Ala Gln Leu Leu Ser

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```
     145                    150                    155                    160
     Lys Leu Ser Val Leu Leu Leu Glu Lys Met Gly Gly Ser Ser Gly Ala
                        165                    170                    175
     Leu Tyr Gly Leu Phe Leu Thr Ala Ala Ala Gln Pro Leu Lys Ala Lys
                    180                    185                    190
     Thr Ser Leu Pro Ala Trp Ser Ala Ala Met Asp Ala Gly Leu Glu Ala
                195                    200                    205
     Met Gln Lys Tyr Gly Lys Ala Ala Pro Gly Asp Arg Thr Met Leu Asp
            210                    215                    220
     Ser Leu Trp Ala Ala Glu Gln Glu Leu Gln Ala Trp Lys Ser Pro Gly
     225                    230                    235                    240
     Ala Asp Leu Leu Gln Val Leu Thr Lys Ala Val Lys Ser Ala Glu Ala
                        245                    250                    255
     Ala Ala Glu Ala Thr Lys Asn Met Glu Ala Gly Ala Gly Arg Ala Ser
                    260                    265                    270
     Tyr Ile Ser Ser Ala Arg Leu Glu Gln Pro Asp Pro Gly Ala Val Ala
                275                    280                    285
     Ala Ala Ala Ile Leu Arg Ala Ile Leu Glu Val Leu Gln Ser
            290                    295                    300
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<210> 4697
<211> 1047
<212> DNA
<213> Homo sapiens

<400> 4697
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120
taccttgtac tgaaaaatgg agtgctggca tacattggga attttcgcct gcttgcagag
180
catttccagc ccgtttgntg aatcagcgac caaaggctgt agtcactgga aacatggact
240
tgttttcatc tctaactctc cacctctcca cactcagcct gcagagcccg gccaacaatc
300
aagacagatg ggaccgtgtt cagaattcac acaaaagctg aaggatttat ggatgcggat
360
atacctctgg aattggtgtt ccatttgcca gtcaattatc cttcatgtct acctggtatc
420
tcgattaact ctgaacagtt gaccagggcc cagtgtgtga ctgtgaaaga gaagttactt
480
gagcaagcag agagcctttt gtcggagcct atggttcatg agctggttct ctggattcag
540
cagaatctca ggcatatcct cagccaacca gaaactggca gtggcagtga aaagtgtact
600
ttttcaacaa gcacgaccat ggatgatgga ttgtggataa ctcttttgca tttagatcac
660
atgagagcaa agactaaata tgtcaaaatt gtggagaagt gggcttcaga tttaaggctg
720
acaggaagac tgatgttcat gggtaaaata atactgattt tactacaggg agacagaaac
780
aacctcaagg tgccaaaaag ttaaatgttg agtatgaatc tggctatttt ctgctttaaa
840
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tggtgtgtct ttaagtgtgt tttataacaa tgggatagat taattattaa gatgtttctg
900
ctttcattat tacaacctta atggatcttc cttttctttt taaagaatgt ctgactgcta
960
attacaagta caaacttgca aagcttgaag aataagattg cattttaaaa atcatgtcac
1020
ttaataaagt gacaggttat ttaaaaa
1047

<210> 4698
<211> 182
<212> PRT
<213> Homo sapiens

<400> 4698
Leu Ser Thr Ser Pro His Ser Ala Cys Arg Ala Arg Pro Thr Ile Lys
 1   5   10   15
Thr Asp Gly Thr Val Phe Arg Ile His Thr Lys Ala Glu Gly Phe Met
                20   25   30
Asp Ala Asp Ile Pro Leu Glu Leu Val Phe His Leu Pro Val Asn Tyr
            35   40   45
Pro Ser Cys Leu Pro Gly Ile Ser Ile Asn Ser Glu Gln Leu Thr Arg
        50   55   60
Ala Gln Cys Val Thr Val Lys Glu Lys Leu Leu Glu Gln Ala Glu Ser
65   70   75   80
Leu Leu Ser Glu Pro Met Val His Glu Leu Val Leu Trp Ile Gln Gln
                85   90   95
Asn Leu Arg His Ile Leu Ser Gln Pro Glu Thr Gly Ser Gly Ser Glu
            100   105   110
Lys Cys Thr Phe Ser Thr Ser Thr Thr Met Asp Asp Gly Leu Trp Ile
        115   120   125
Thr Leu Leu His Leu Asp His Met Arg Ala Lys Thr Lys Tyr Val Lys
        130   135   140
Ile Val Glu Lys Trp Ala Ser Asp Leu Arg Leu Thr Gly Arg Leu Met
145   150   155   160
Phe Met Gly Lys Ile Ile Leu Ile Leu Leu Gln Gly Asp Arg Asn Asn
                165   170   175
Leu Lys Val Pro Lys Ser
                180

<210> 4699
<211> 1441
<212> DNA
<213> Homo sapiens

<400> 4699
tctttttttt tttttttttt tacagtgatt tcaaacagtt taatgtaatt ccaagacaaa
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gtgtgattac atttctacac atatacaata tgcatatgtg agtttacaaa ttttaattaa
120
taagtcattt cacctcggag accgaaaaaa tgatcaaaaa gaaactatga gtaacaagct
180
ataacatagt tcaccacaat gggacccccc cccccttttt ctcaccctac agttagtaat
240

3886

attacaatta aaataactat attcttctat atttttctg ttaaaatcat ctcataaatt
300
tacaatgcta ttattagttt ccaagactaa tataaattca ctccattttt ctacaacgaa
360
aatgattaat ttagaagcac acgacgtcat gatgaaaaac acaagcattt tagtagcaag
420
gacttgatca gttaagaatt agttttcttg taaaacattc taaagccaag taaaatatcc
480
attcttataa catacctata atatgagact aaggaatagg ttacatatag gtctacaaca
540
cattggtttg tctttaaaaa aacaaaagta gacatttata aataaaaaag agggacaatt
600
cacataggaa aaagaggtac acgagaaaat actgttgcac gcaataattt tcacacagat
660
taacatggat taacactttt tattacagaa accgtacggt gaaggaacac aacagaccag
720
ggctttcata gggttattga gattgagctg agatgacctg ggagagaaag atctaggtga
780
gatgaccctg gggagggagc cacgttcctt ggacctggtg acttagtgtc gccgggtctc
840
ctcttccctg ttctcatttt ggggagtgag tctttctatc cagtgtcctg aattcatgag
900
cagttgaaag gtaaacattt ctgcagatcc attctctttc tatcctaatg gataccattt
960
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1020
gatggaaact tccagtcact ctgatttgtt gccccgtca cccactgatg cgcttgaagc
1080
tgggacccag tgagacagca gcagcaccct acagggcctg ctggctctgc cgtggtgagg
1140
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1200
gcccatgcac gtccaagaca ccagtcttga ctccgacctc taaagagctc cttctcctca
1260
tctgtaaagc tatacttctc ctatccaatt tggtttgata tatatacaca aacatatata
1320
tcaacatcta tctctataca gtgattctac taaattagaa attctgctgc cccaaagtat
1380
gactttcttg tctatttcat ttggttaaaa aaatgcacac acagaggatg aagagatgat
1440
t
1441

<210> 4700
<211> 116
<212> PRT
<213> Homo sapiens

<400> 4700
Met Asp Thr Ile Phe Gly Asn Val Thr Glu Tyr Gln Arg Leu Gln Leu
 1   5   10   15
Ser Thr Arg Gly Gln Ser Lys Thr Gly Trp Lys Leu Pro Val Thr Leu
            20   25   30
Ile Cys Cys Pro Arg His Pro Leu Met Arg Leu Lys Leu Gly Pro Ser

```
          35                    40                    45
Glu Thr Ala Ala Ala Pro Tyr Arg Ala Cys Trp Leu Cys Arg Gly Glu
      50                    55                    60
Val Asp Asp Lys Gly Thr Arg His Ala Ser Ala Pro Cys Val Arg Ser
65                    70                    75                    80
Gly Leu Gly His Ser Pro Cys Thr Ser Lys Thr Pro Val Leu Thr Pro
                  85                    90                    95
Thr Ser Lys Glu Leu Leu Leu Leu Ile Cys Lys Ala Ile Leu Leu Leu
              100                   105                   110
Ser Asn Leu Val
          115
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<210> 4701
<211> 812
<212> DNA
<213> Homo sapiens

<400> 4701
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120
cctggccatt ttttcttga dacaaggtct tattctctcg ccaagaatgg agtgcagtgg
180
tgcaatgttg gctcactgca gcccaaacct cctgggctta agtgatcctc ctacctcagc
240
ctctcgagta gcnaggacca caggcgcnca ccatcacacc cagctaatgt tttattcttc
300
ngtagagatg gggtctcacc gtgtggccca ggctggcaac tgcatttttt tctcccagct
360
caaggaggga ggagcagccg agcccagcag gtacaacgtg ggtttgctct gtgctgggag
420
agctacaggg ctgtgcagag ccggcaggga caggacctgg ggctccagga ggcccccaca
480
tgctgcctct cagccacctg ccagccctgt tttatgaata tgtttaccgt ggctgtcact
540
ttgtcccggt ctgtcacaaa ggcacggaat ccttccccaa acaaggtgcc agccgtcctg
600
atggactcca agacggtctg acggtgctcg gacgccttca ggcggatctg ctcgcggatg
660
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720
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780
tgcttctgca agaactcctc ctgcttccgt aa
812

<210> 4702
<211> 69
<212> PRT
<213> Homo sapiens

<400> 4702
Arg Gln Gly Phe Thr Leu Thr Arg Met Ile Ser Ile Ser Gly Pro Arg

```
      1                 5                      10                     15
Asp Pro Pro Thr Ser Ala Ser Glu Asn Ala Gly Ile Thr Gly Leu Ser
                20                      25                     30
His Xaa Pro Pro Gly His Phe Phe Leu Glu Thr Arg Ser Tyr Ser Leu
                35                      40                     45
Ala Lys Asn Gly Val Gln Trp Cys Asn Val Gly Ser Leu Gln Pro Lys
                50                      55                     60
Pro Pro Gly Leu Lys
65
```

<210> 4703
<211> 513
<212> DNA
<213> Homo sapiens

<400> 4703

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120
cgaagagtct tcgaagggtt gccgcttttc ggtggcgcag ttctcgcgag aaggaaaatg
180
gcagctcccg agcagccgct tgcgatatca aggggatgca cgagctcctc ctcgctttcc
240
ccgcctcggg ctgaccgaac ccttctggtc aggcacctgc cggctgagct tactgctgag
300
gagaaagagg acttgctgaa gtacttcggg gctcagtctg tgcgggtcct gtcagataag
360
gggcgactga acatacagc ttttgccaca ttccctaatg aaaaagcagc tataaaggca
420
ttgacaagac tccatcaact gaaactttta ggtcatactt tagtcgttga atttgcaaaa
480
gagcaagatc gagttcactc cccatgtccc act
513
```

<210> 4704
<211> 112
<212> PRT
<213> Homo sapiens

<400> 4704

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Met Ala Ala Pro Glu Gln Pro Leu Ala Ile Ser Arg Gly Cys Thr Ser
1                 5                      10                     15
Ser Ser Ser Leu Ser Pro Pro Arg Ala Asp Arg Thr Leu Leu Val Arg
                20                      25                     30
His Leu Pro Ala Glu Leu Thr Ala Glu Glu Lys Glu Asp Leu Leu Lys
                35                      40                     45
Tyr Phe Gly Ala Gln Ser Val Arg Val Leu Ser Asp Lys Gly Arg Leu
                50                      55                     60
Lys His Thr Ala Phe Ala Thr Phe Pro Asn Glu Lys Ala Ala Ile Lys
65                      70                     75                     80
Ala Leu Thr Arg Leu His Gln Leu Lys Leu Leu Gly His Thr Leu Val
                85                      90                     95
Val Glu Phe Ala Lys Glu Gln Asp Arg Val His Ser Pro Cys Pro Thr
```

100   105   110

<210> 4705
<211> 569
<212> DNA
<213> Homo sapiens

<400> 4705
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aacattgacc cctagccatg cccaccccgg gggatgcagc cgtagagaac acggccgaag
120
gaaggatgga aaggacccag gagcgataac agtaaatcaa ataagatatt tgtcggtgga
180
attcctcaca attgtggtga dacagagctc agggaatact tcaagaagtt cggagtggtc
240
acggaggtag tcatgatcta tgacgccgag aagcagaggc cccgaggtaa gggcagatct
300
agtttgacct cggccttctc cctgctcctc cctcagatgg caaactatct cacccgccag
360
gcacacacag gtggcggctg tagcaaacag cctcaggaag ggacgatttg gagacaaatg
420
actaaaacgt gggctcctca tgtgcacccc attcagcctg tctgtgcttc ccgaggtcag
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540
ggcctggctt ctgtttttca ctgtccgga
569

<210> 4706
<211> 154
<212> PRT
<213> Homo sapiens

<400> 4706
Arg Thr Arg Pro Lys Glu Gly Trp Lys Gly Pro Arg Ser Asp Asn Ser
 1   5   10   15
Lys Ser Asn Lys Ile Phe Val Gly Gly Ile Pro His Asn Cys Gly Glu
            20   25   30
Thr Glu Leu Arg Glu Tyr Phe Lys Lys Phe Gly Val Val Thr Glu Val
        35   40   45
Val Met Ile Tyr Asp Ala Glu Lys Gln Arg Pro Arg Gly Lys Gly Arg
    50   55   60
Ser Ser Leu Thr Ser Ala Phe Ser Leu Leu Leu Pro Gln Met Ala Asn
65   70   75   80
Tyr Leu Thr Arg Gln Ala His Thr Gly Gly Gly Cys Ser Lys Gln Pro
                85   90   95
Gln Glu Gly Thr Ile Trp Arg Gln Met Thr Lys Thr Trp Ala Pro His
            100   105   110
Val His Pro Ile Gln Pro Val Cys Ala Ser Arg Gly Gln Thr Ser His
            115   120   125
Ile Val Phe Trp Leu Val Leu Leu Lys Phe Leu Arg Leu Val Met Ser
        130   135   140
Leu Gly Leu Ala Ser Val Phe His Cys Pro

145   150

<210> 4707
<211> 748
<212> DNA
<213> Homo sapiens

<400> 4707
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ttctttgatt gacaacttgt gttaaccctc gcacatctct gggccaattt ttgcttgtaa
120
gtctttccgg agacccctgg aatttaaatc attagcaccg cgcccttccc cgaagagtct
180
tcgaagggtt gccgcttttc ggtggcgcag ttctcgcgag aaggtgactt tctttctcgg
240
tatttcctgg tttccagaat ccttagcgcg aggcggaaaa aatatttctc ccagcttgtg
300
ttgatgccgc gattttgact gagacttctt cccacgattt ctgttttttgc ttctccaagg
360
aaaatggcag ctcccgagca gccgcttgcg atatcaaggg gatgcacgag ctcctcctcg
420
ctttcccccgc ctcggggcga ccgaacccct ctggtcaggc acctgccggc tgagcttact
480
gctgaggaga aagaggactt gctgaagtac ttcggggctc agtctgtgcg ggtcctgtca
540
gataaggggc gactgaaaca tacagctttt gccacattcc ctaatgaaaa agcagctata
600
aaggcattga caagactcca tcaactgaaa cttttaggtc atactttagt cgttgaattt
660
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720
atgtctgatg accctgtcga agatgata
748

<210> 4708
<211> 128
<212> PRT
<213> Homo sapiens

<400> 4708
Met Ala Ala Pro Glu Gln Pro Leu Ala Ile Ser Arg Gly Cys Thr Ser
1   5   10   15
Ser Ser Ser Leu Ser Pro Pro Arg Gly Asp Arg Thr Leu Leu Val Arg
            20   25   30
His Leu Pro Ala Glu Leu Thr Ala Glu Glu Lys Glu Asp Leu Leu Lys
        35   40   45
Tyr Phe Gly Ala Gln Ser Val Arg Val Leu Ser Asp Lys Gly Arg Leu
    50   55   60
Lys His Thr Ala Phe Ala Thr Phe Pro Asn Glu Lys Ala Ala Ile Lys
65   70   75   80
Ala Leu Thr Arg Leu His Gln Leu Lys Leu Leu Gly His Thr Leu Val
                85   90   95
Val Glu Phe Ala Lys Glu Gln Asp Arg Val His Ser Pro Cys Pro Thr

```
            100            105              110
Ser Gly Ser Glu Lys Lys Lys Met Ser Asp Asp Pro Val Glu Asp Asp
        115              120                125
```

<210> 4709
<211> 1351
<212> DNA
<213> Homo sapiens

<400> 4709

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120
ggcgccgacg agatcgggaa gctcttcgtg ggcggtcttg actggagcac gacccaagag
180
actctgcgca gctacttttc ccaatatgga gaagtcgtag attgtgttat catgaaagat
240
aaaaccacca accagtctcg aggctttggg tttgtcaaat ttaaagaccc aaactgtgtg
300
gggacggtgc tggccagcag accgcacacg ctagatggcc gaaacatcga ccccaagcca
360
tgcacacccc gggggatgca gccggagaga acacggccga aggaaggatg gcagaaagga
420
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480
ggtgagacag agctcaggga atacttcaag aagttcggag tggtcacgga ggtagtcatg
540
atctatgacg ccgagaagca gaggccccga ggttttggat ttattacttt cgaggacgaa
600
caatcagtgg accaggctgt caacatgcat tttcacgaca tcatgggcaa aaaagtggaa
660
gttaaacgag ctgagcctcg ggacagcaag agccaagcgc cgggacagcc aggtgccagc
720
cagtggggga gccgggttgt gcccaacgct gccaatggct gggcaggcca gccccgccc
780
acgtggcagc aaggatatgg cccgcaagga atgtgggtgc cggcaggaca ggcgattggt
840
ggctatggac cgccccctgc aggaagagga gccccccgc caccccacc gttcacctcc
900
tacatcgtgt ccacccctcc tggaggcttt cccctcccc agggcttccc tcagggctac
960
ggtgccccgc cacagttcag ttttggctac gggcctccac ctccaccgcc aggcagccgc
1020
tgacccgcac tcctaagggc ccacagcgga caccagaggg cttttgtct gcagagcgtc
1080
ttccaccagc agagcctttg gaagctcccc cagggagccc cacccaggac cctttggggg
1140
atgcctcagt cagggccagg ctgaccctga ccctgctta ccctagtccc ctcaacctcc
1200
tgacactgga ggaatacttt tctcctaagt ctaccctgga cacttttag ggcacctgga
1260
gagaactttc ctctccactg tggcccctgc gtggtgaaga tcaaaagaag ttgtttggga
1320
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1351

<210> 4710
<211> 304
<212> PRT
<213> Homo sapiens

<400> 4710
Met Asn Asn Ser Gly Ala Asp Glu Ile Gly Lys Leu Phe Val Gly Gly
 1   5   10   15
Leu Asp Trp Ser Thr Thr Gln Glu Thr Leu Arg Ser Tyr Phe Ser Gln
            20   25   30
Tyr Gly Glu Val Val Asp Cys Val Ile Met Lys Asp Lys Thr Thr Asn
        35   40   45
Gln Ser Arg Gly Phe Gly Phe Val Lys Phe Lys Asp Pro Asn Cys Val
    50   55   60
Gly Thr Val Leu Ala Ser Arg Pro His Thr Leu Asp Gly Arg Asn Ile
65   70   75   80
Asp Pro Lys Pro Cys Thr Pro Arg Gly Met Gln Pro Glu Arg Thr Arg
                85   90   95
Pro Lys Glu Gly Trp Gln Lys Gly Pro Arg Ser Asp Asn Ser Lys Ser
            100   105   110
Asn Lys Ile Phe Val Gly Gly Ile Pro His Asn Cys Gly Glu Thr Glu
        115   120   125
Leu Arg Glu Tyr Phe Lys Lys Phe Gly Val Val Thr Glu Val Val Met
    130   135   140
Ile Tyr Asp Ala Glu Lys Gln Arg Pro Arg Gly Phe Gly Phe Ile Thr
145   150   155   160
Phe Glu Asp Glu Gln Ser Val Asp Gln Ala Val Asn Met His Phe His
                165   170   175
Asp Ile Met Gly Lys Lys Val Glu Val Lys Arg Ala Glu Pro Arg Asp
            180   185   190
Ser Lys Ser Gln Ala Pro Gly Gln Pro Gly Ala Ser Gln Trp Gly Ser
            195   200   205
Arg Val Val Pro Asn Ala Ala Asn Gly Trp Ala Gly Gln Pro Pro Pro
    210   215   220
Thr Trp Gln Gln Gly Tyr Gly Pro Gln Gly Met Trp Val Pro Ala Gly
225   230   235   240
Gln Ala Ile Gly Gly Tyr Gly Pro Pro Pro Ala Gly Arg Gly Ala Pro
                245   250   255
Pro Pro Pro Pro Pro Phe Thr Ser Tyr Ile Val Ser Thr Pro Pro Gly
            260   265   270
Gly Phe Pro Pro Pro Gln Gly Phe Pro Gln Gly Tyr Gly Ala Pro Pro
        275   280   285
Gln Phe Ser Phe Gly Tyr Gly Pro Pro Pro Pro Pro Gly Ser Arg
    290   295   300

<210> 4711
<211> 2061
<212> DNA
<213> Homo sapiens

<400> 4711

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120
gatgtgatgc ctggcgaggg tgaccttccg cagatggagg taggcagcgg gagccgggag
180
ctatccctgc gtccctcccg cagcggggcc caacagctcg aggaggaagg cccaatggag
240
gaggaggagg cccagccaat ggcggcgcca gaggggaaac ggagccttgc taacgggccc
300
aacgctgggg agcagccagg ccaggtggcg ggcgcagact tcgagagcga ggacgagggc
360
gaggaatttg atgactggga ggacgactac gactatcccg aagaggagca gctcagtggt
420
gccggctaca gagtatcagc cgctcttgaa gaagccgaca agatgtttct gagaacaaga
480
gaaccagccc tggatggcgg gtttcagatg cattatgaga agaccccgtt tgatcagtta
540
gcttttatcg aagagctttt ttcactgatg gttgtcaatc gtctgaccga agaactcggc
600
tgtgatgaga ttattgatag agagtagtta gatgctgtta aaagaggagg aaactacttg
660
aggagggacc caactttccg ctatctttg ggttcattcc aaatagtttt gtgccattga
720
aaaacttgac cttcaaaaaa atttgttttt cagaatagaa cacaatagga cagtgactgc
780
acagttgtga aaaaggaaga gaatcattaa agaaaaagaa aaaagatttt aagaccgttg
840
aaatcaatta tcaagaacgt cctaaaacac ctatggcttt gactttgtta ttgatccaga
900
ttattttcct tgcattgggg aaaatatctt tcatatttgt ttgctgtaaa gatggttttg
960
caagaataag tcatgaccaa gacaaactgc aatacaaaa gcccactgat actaattata
1020
taatgagaaa aaaatgtatc caactaggac acatatcttt tgagttattt ggactgaaag
1080
cttaagaaaa cttggaaaat tctattttgt gatctagtca agccacagtt atcaaaggct
1140
acattttcag tgtaagataa atggatgagt aaactcaaat atgtatcacg tgtgctttgt
1200
atcttaagat gtgtttccaa gagcatctga aattttgttt gtacatgtat cttgatcatt
1260
tataaagcca ctgtgatcta taaatcaaga aaatccattg tcataaccat ttttaaaagt
1320
caaaaattaa gacatcctta attaaaaagt ttcaaatcta gacactaaat gtgtgtgaat
1380
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1440
gctgttttaa cttgacagat gaaggacttt agttgaactt catattgtaa gaactgttaa
1500
taaaagttgt caagtaaaaa gcgctatatc taaaaagact ttatgaacag ttattctatc
1560
aacttttaaa ggttttaaac ctgcccagaa attaccttgg tatctgaagt ttccctctgt
1620
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ctcctcctct aattaagctt gttatttgtc atgcaccagc attggagata ataaaatttc
1680
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1800
acaaattaat ttctggaaat taaactttgt aaattaagtt tttgcctata agaatttgct
1860
ggtctgggaa aacctgccct atcaatgagt atgttgccgt ggttacctta ctaagatgct
1920
gaagttctag gagagtaatg attacatcag aaggctaggt tcagcaaaat aagtgtatca
1980
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2040
agaacgaata tccaatgcaa a
2061
```

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<210> 4712
<211> 187
<212> PRT
<213> Homo sapiens
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<400> 4712
Met Ser Glu Met Ala Glu Leu Ser Glu Leu Tyr Glu Glu Ser Ser Asp
1               5                   10                  15
Leu Gln Met Asp Val Met Pro Gly Glu Gly Asp Leu Pro Gln Met Glu
            20                  25                  30
Val Gly Ser Gly Ser Arg Glu Leu Ser Leu Arg Pro Ser Arg Ser Gly
        35                  40                  45
Ala Gln Gln Leu Glu Glu Glu Gly Pro Met Glu Glu Glu Glu Ala Gln
    50                  55                  60
Pro Met Ala Ala Pro Glu Gly Lys Arg Ser Leu Ala Asn Gly Pro Asn
65                  70                  75                  80
Ala Gly Glu Gln Pro Gly Gln Val Ala Gly Ala Asp Phe Glu Ser Glu
                85                  90                  95
Asp Glu Gly Glu Glu Phe Asp Asp Trp Glu Asp Asp Tyr Asp Tyr Pro
                100                 105                 110
Glu Glu Glu Gln Leu Ser Gly Ala Gly Tyr Arg Val Ser Ala Ala Leu
            115                 120                 125
Glu Glu Ala Asp Lys Met Phe Leu Arg Thr Arg Glu Pro Ala Leu Asp
        130                 135                 140
Gly Gly Phe Gln Met His Tyr Glu Lys Thr Pro Phe Asp Gln Leu Ala
145                 150                 155                 160
Phe Ile Glu Glu Leu Phe Ser Leu Met Val Val Asn Arg Leu Thr Glu
                165                 170                 175
Glu Leu Gly Cys Asp Glu Ile Ile Asp Arg Glu
                180                 185
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```
<210> 4713
<211> 1324
<212> DNA
<213> Homo sapiens
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<400> 4713
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cctcctctca cacagaaccc cctcctctca cggaacccccc tcctctcacg gaacccccctc
120
ctctcacgga acgccctcct ctcacacaga accccctcct ctcaccgaat cccatctcag
180
tcttgagttt tccctcgact ctgttgcttc cgctcacatc ttagtgagtc cccagggcct
240
ctgcggggca tggaatcaca cgtgcagtgt ccggcatgt tcagcctggt gtgtgacagt
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360
gctttgtgct caagtgctga gcagagtaga ctctcagcag atgtttgaat gaatgggtga
420
accaatggct gcacaaatga acgagcctga ctctccctca tgatttggtc catagtgtgt
480
ttaaataccc tcctagtggg cttttagctc cttgaagatg gaaacaggtt tgcatagtaa
540
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660
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tggctcccag accacagtgt ttcttcctga agccggtggt tgcagccact ttgccttgct
780
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960
gcagctgatg cccgaggacg cgctggacac cggtctgcag ccgcttccaa cctctccggc
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ctcagcctcc aggaggcaca gcagattctc aacgtgtcca agctgagccc tgaggaggtc
1080
cagaagaact atgaacactt atttaaggtg aatgataaat ccgtgggtgg ctccttctac
1140
ctgcagtcaa aggtggtccg cgcaaaggag cgcctggatg aggaactcaa aatccaggcc
1200
caggaggaca gagaaaaagg gcagatgccc catacgtgac tgctcggctc ccccgccca
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1320
aaaa
1324


<210> 4714
<211> 145
<212> PRT
<213> Homo sapiens

<400> 4714
Met Arg Trp Gly Gln Ser Ala Ser Gly Ser Ser Val Lys Phe Thr Arg
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1                5                    10                    15
Leu Pro Ala Cys Pro Ala Lys Tyr Leu Ala Gln Ile Ile Val Met Gly
            20                    25                    30
Val Gln Val Val Gly Arg Ala Phe Ala Arg Ala Leu Arg Gln Glu Phe
            35                    40                    45
Ala Ala Ser Arg Ala Ala Ala Asp Ala Arg Gly Arg Ala Gly His Arg
            50                    55                    60
Ser Ala Ala Ala Ser Asn Leu Ser Gly Leu Ser Leu Gln Glu Ala Gln
65                    70                    75                    80
Gln Ile Leu Asn Val Ser Lys Leu Ser Pro Glu Glu Val Gln Lys Asn
                  85                    90                    95
Tyr Glu His Leu Phe Lys Val Asn Asp Lys Ser Val Gly Gly Ser Phe
            100                   105                   110
Tyr Leu Gln Ser Lys Val Val Arg Ala Lys Glu Arg Leu Asp Glu Glu
            115                   120                   125
Leu Lys Ile Gln Ala Gln Glu Asp Arg Glu Lys Gly Gln Met Pro His
            130                   135                   140
Thr
145
```

<210> 4715
<211> 2051
<212> DNA
<213> Homo sapiens

<400> 4715
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gtgagagtct gaggatagag acttttttct caccatgaat gtcaccccag aggtcaagag
180
tcgtgggatg aagtttgctg aggagcagct gctaaagcat ggatggactc aaggcaaagg
240
cctcggcgga aggagaatgg tatcactcag gctctcaggg tgacactgaa gcaagacact
300
catggggtag gacatgaccc tgccaaggag ttcacaaacc actggtggaa tgagctcttc
360
aacaagactg cggccaactt ggtagtggaa actgggcagg atggagtaca gataaggagc
420
ctttctaagg agaccacccg ttataatcat cccaagccca acttgctgta tcagaagttt
480
gtgaagatgg ctacattgac ttcaggtgga gagaagccaa acaaagactt ggagagctgc
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agtgatgacg acaaccaggg gtccaagtcc ccaaagattc tgactgatga gatgctgctc
600
caagcctgtg aggggcgaac agcacacaag gctgcccgtc ttgggatcac aatgaaggcc
660
aagcttgctc gcctagaggc ccaggagcag gccttcctgg ctcgtctcaa aggccaggac
720
cctggggccc ctcaactgca gtcagagagc aagccccca aaaaaaagaa aagaaaagg
780
aggcagaaag aggaggaaga agctacagca tctgaaagga atgatgcaga tgagaagcac
840
```

```
ccagaacatg ctgagcagaa catcagaaaa agcaagaaga agaaaaggcg acatcaagaa
900
ggaaaggtct cagatgaaag agagggtaca actaaagaat gagaaggagg acgctgcagg
960
aacaagtggg cttggggaat tgaatagcag agagcaaacc aatcagtccc tcaggaaagg
1020
gaagaaaaag aagaggtgng caccatgaag aggagaagat gggggtcttg gaggaaggag
1080
gaaaaggcaa ggaggctgca gagtgtcagg acagaggagg tagagagcag ggcatatgct
1140
gacccatgca gccgaagaaa gaagaggcag caacaggagg aggaggactt gaacctagaa
1200
gatagaggtg aggaaactgt tttaggtggt ggaaccaggg aagcagagag cagagcatgc
1260
agtgatggaa gaagcaggaa aagcaagaag aaaagacagc agcatcaaga ggaggaggac
1320
atcttggatg taagggatga gaaggatggc ggggctaggg aagcagagag cagagcacac
1380
actggctcaa gcagcnagag gtaagaggaa gaggcagcag catcccaaga aggaaagagc
1440
tggagtcagc actgtccaga aagccaaaaa gaaacagaag aagagagact aaaggtctgg
1500
taaaggtagg gctcaattga ttgattttca ggagttgaag cctcaaagac cagggttgat
1560
gcaggtctgc aggtcttctg cacccccctc aatgaggagt ccctcccaga aaggaaactg
1620
atctctggga cgtcagctgc tgagaggagc aagcggtagt accacccctt agttgaggga
1680
gtcagcacag tcctttctgc agcttctaac ccaggaccat gaactcaggt gcctagagaa
1740
gccaggcagc taaaggacaa ggaatgctgg gggctgtggg aacaggaatg cagataccct
1800
ttgaaggagc attcctgcta aaagaagctg aaaatgtaga cctatgtgaa gtgctctgat
1860
ttctaaatat tgtgaaggtt aagaaaaaca taaatttagg tctatgggct agatttagcc
1920
cacagttgcc agtttctagc gctaccaaat gaatgaataa acatgcttgc gctcctagcc
1980
tagagataaa tcctgactgg catctctgtt cccagcctgg gaaggtcctg aatacaaatt
2040
agaagatatt c
2051
```

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<210> 4716
<211> 239
<212> PRT
<213> Homo sapiens
```

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<400> 4716
Met Asp Ser Arg Gln Arg Pro Arg Arg Lys Glu Asn Gly Ile Thr Gln
1               5                   10                  15
Ala Leu Arg Val Thr Leu Lys Gln Asp Thr His Gly Val Gly His Asp
            20                  25                  30
Pro Ala Lys Glu Phe Thr Asn His Trp Trp Asn Glu Leu Phe Asn Lys
```

```
              35                    40                    45
Thr Ala Ala Asn Leu Val Val Glu Thr Gly Gln Asp Gly Val Gln Ile
         50                    55                    60
Arg Ser Leu Ser Lys Glu Thr Thr Arg Tyr Asn His Pro Lys Pro Asn
65                    70                    75                    80
Leu Leu Tyr Gln Lys Phe Val Lys Met Ala Thr Leu Thr Ser Gly Gly
                   85                    90                    95
Glu Lys Pro Asn Lys Asp Leu Glu Ser Cys Ser Asp Asp Asp Asn Gln
              100                   105                   110
Gly Ser Lys Ser Pro Lys Ile Leu Thr Asp Glu Met Leu Leu Gln Ala
         115                   120                   125
Cys Glu Gly Arg Thr Ala His Lys Ala Ala Arg Leu Gly Ile Thr Met
         130                   135                   140
Lys Ala Lys Leu Ala Arg Leu Glu Ala Gln Glu Gln Ala Phe Leu Ala
145                   150                   155                   160
Arg Leu Lys Gly Gln Asp Pro Gly Ala Pro Gln Leu Gln Ser Glu Ser
                   165                   170                   175
Lys Pro Pro Lys Lys Lys Lys Lys Arg Arg Gln Lys Glu Glu Glu
              180                   185                   190
Glu Ala Thr Ala Ser Glu Arg Asn Asp Ala Asp Glu Lys His Pro Glu
         195                   200                   205
His Ala Glu Gln Asn Ile Arg Lys Ser Lys Lys Lys Arg Arg His
210                   215                   220
Gln Glu Gly Lys Val Ser Asp Glu Arg Glu Gly Thr Thr Lys Glu
225                   230                   235
```

<210> 4717
<211> 2753
<212> DNA
<213> Homo sapiens

<400> 4717
nggtacccgg tgtgatgggc cgcccactgg tctgcagagc ttcccaggct gcctgcaggc
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120
gctctgagtt gggtgaaccg gggtccccat agcgggtaac ttgggatggt gggtacttgg
180
ccagccaggc atccagctta gtggcaggcg ttgtgcgggc atcaaacact agccaggggt
240
ccatgtcagc tgccatggcc tctgcagcca ggtgctcggc ggtgaagcca tcctcacggc
300
cacctggaga gccctcctct tccagctcct cacctggttc atcctgctc cggccttcgc
360
tgcgttcgac gccggcccag ccccgggccc ggctccgctc ctgccgtggc tccgcgcagc
420
atcctgggcc tccccccgct ttctgaggac agcatcaaag tgattcgcaa catgagagca
480
gcctctccac cagcatctgc ttcagacttg attgagcagc agcagaaacg gggccgccga
540
gagcacaagg ctctgataaa gcaggacaac ctagatgcct tcaacgagcg ggatccctac
600
aaggctgatg actctcgaga agaggaagag gagaatgatg atgacaacag tctggagggg
660
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```
gagacgtttc ccctggaacg ggatgaagtg atgcctcccc cgctacagca cccacagact
720
gacaggctga cttgccccaa agggctcccg tgggctccca aggtcagaga gaaagacatt
780
gagatgttcc ttgagtccag ccgcagcaaa tttataggtt acactctagg cagtgacacg
840
aacacagtgg tggggctgcc caggccaatc cacgaaagca tcaagactct gaaacagcac
900
aagtacacgt cgattgcaga ggtccaggca cagatgaagg aggaatacct ccgctcccct
960
ctctcagggg gagaagaaga agttgagcaa gtccctgcag aaaccctcta ccaaggcttg
1020
ctccccagcc tgcctcagta tatgattgcc ctcctgaaga tcctgttggc tgcagcaccc
1080
acctcaaaag ccaaaacaga ctcaatcaac atcctagcgg acgtcttgcc tgaggagatg
1140
cccaccacag tgttgcagag catgaagctg ggggtggatg taaaccgcca caaagaggtc
1200
attgttaaag ccatttctgc tgccctgctg ctgctgctta agcactttta agtgaaccat
1260
ttctaccagt ttgaatacat ggcccagcac ctggtgtttg ccaactgcat tcctttgatc
1320
ctaaagttct tcaatcaaaa catcatgtcc tacatcactg ccaagaacag catttctgtc
1380
ctggattacc ctcactgcgt ggtgcatgag ctgccagagc tgacggcgga gagtttggaa
1440
gcaggtgaca gtaaccaatt ttgctggagg aacctctttt cttgtatcaa tctgcttcgg
1500
atcttgaaca agctgacaaa gtggaagcat tcaaggacaa tgatgctggt ggtgttcaag
1560
tcagccccca tcttgaagcg ggccctaaag gtgaaacaag ccatgatgca gctctatgtg
1620
ctgaagctgc tcaaggtaca gaccaaatac ttggggcggc agtggcgaaa gagcaacatg
1680
aagaccatgt ctgccatcta ccagaaggtg cggcatcggc tgaacgacga ctgggcatac
1740
ggcaatgatc ttgatgcccg gccttgggac ttccaggcag aggagtgtgc ccttcgtgcc
1800
aacattgaac gcttcaacgc ccggcgctat gaccgggccc acagcaaccc tgacttcctg
1860
ccagtggaca ctgcctgca gagtgtcctg ggccaacggg tggacctccc tgaggacttt
1920
cagatgaact atgacctctg gttagaaagg gaggtcttct ccaagcccat ttcctgggaa
1980
gagctgctgc agtgaggctg ttggttaggg gactgaaatg gagagaaaag atgatctgaa
2040
ggtacctgtg ggactgtcct agttcattgc tgcagtgctc ccatccccca ccaggtggca
2100
gcacagcccc actgtgtctt ccgcagtctg tcctgggctt gggtgagccc agcttgacct
2160
ccccttggtt cccagggtcc tgctccgaag cagtcatctc tgcctgagat ccattcttcc
2220
tttacttccc ccaccctcct ctcttggata tggttggttt tggctcattt cacaatcagc
2280
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```
ccaaggctgg gaaagctgga atgggatggg aacccctccg ccgtgcatct gaatttcagg
2340
ggtcatgctg atgcctctcg agacatacaa atccttgctt tgtcagcttg caaaggagga
2400
gagtttagga ttagggccag ggccagaaag tcggtatctt ggttgtgctc tggggtgggg
2460
gtggggtgtt tctgatgtta ttccagcctc ctgctacatt atatccagaa gtaattgcgg
2520
aggctccttc agctgcctca gcactttgat tttggacagg gacaaggtag gaagagaagc
2580
ttcccttaac cagaggggcc atttttcctt ttggctttcg agggcctgta aatatctata
2640
tataattctg tgtgtattct gtgtcatgtt ggggttttta atgtgattgt gtattctgtt
2700
tacattaaaa agaagcaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa aaa
2753
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<210> 4718
<211> 259
<212> PRT
<213> Homo sapiens

<400> 4718

```
Met Arg Ala Ala Ser Pro Pro Ala Ser Ala Ser Asp Leu Ile Glu Gln
 1               5                  10                  15
Gln Gln Lys Arg Gly Arg Arg Glu His Lys Ala Leu Ile Lys Gln Asp
            20                  25                  30
Asn Leu Asp Ala Phe Asn Glu Arg Asp Pro Tyr Lys Ala Asp Asp Ser
            35                  40                  45
Arg Glu Glu Glu Glu Glu Asn Asp Asp Asp Asn Ser Leu Glu Gly Glu
        50                  55                  60
Thr Phe Pro Leu Glu Arg Asp Glu Val Met Pro Pro Pro Leu Gln His
65                  70                  75                  80
Pro Gln Thr Asp Arg Leu Thr Cys Pro Lys Gly Leu Pro Trp Ala Pro
                85                  90                  95
Lys Val Arg Glu Lys Asp Ile Glu Met Phe Leu Glu Ser Ser Arg Ser
                100                 105                 110
Lys Phe Ile Gly Tyr Thr Leu Gly Ser Asp Thr Asn Thr Val Val Gly
            115                 120                 125
Leu Pro Arg Pro Ile His Glu Ser Ile Lys Thr Leu Lys Gln His Lys
        130                 135                 140
Tyr Thr Ser Ile Ala Glu Val Gln Ala Gln Met Lys Glu Glu Tyr Leu
145                 150                 155                 160
Arg Ser Pro Leu Ser Gly Gly Glu Glu Glu Val Glu Gln Val Pro Ala
                165                 170                 175
Glu Thr Leu Tyr Gln Gly Leu Leu Pro Ser Leu Pro Gln Tyr Met Ile
            180                 185                 190
Ala Leu Leu Lys Ile Leu Leu Ala Ala Ala Pro Thr Ser Lys Ala Lys
            195                 200                 205
Thr Asp Ser Ile Asn Ile Leu Ala Asp Val Leu Pro Glu Glu Met Pro
        210                 215                 220
Thr Thr Val Leu Gln Ser Met Lys Leu Gly Val Asp Val Asn Arg His
225                 230                 235                 240
Lys Glu Val Ile Val Lys Ala Ile Ser Ala Ala Leu Leu Leu Leu Leu
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                                      3901
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```
              245              250              255
Lys His Phe


<210> 4719
<211> 589
<212> DNA
<213> Homo sapiens


<400> 4719
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60
aacatggagg tggagtgcaa ctaccactgc taccacgaga aggacccgga cggttgctat
120
cggctggtgg actatttgga agggatccgg aagaattttg atgaggctgc caaggtgttg
180
aagtttaact gtgaagagaa ccagcacagt gatagctgct acaaactggg ggcctactat
240
gtgactggaa aaggtggtct gacccaggac ctgaaagctg ccgccaggtg cttttttgatg
300
gcgtgtgaga gcctggaaa gaagtcaata gcagcatgtc acaacgttgg cctcctggca
360
catgatggac aggttaatga ggatggccag cctgacttgg gaaaggccag ggactactac
420
acaagggcct gtgatggtgg ctatacttcc agttgcttca acctcagtgc catgttcctg
480
cagggtgccc caggctttcc caaggacatg gacctggcat gtaaatactc catgaaagcc
540
tgtgacctgg gtcatatctg ggcctgtgcc aatgccagtc gcatgtaca
589


<210> 4720
<211> 196
<212> PRT
<213> Homo sapiens


<400> 4720
Arg Thr Met Ala Gly Met Val Asp Phe Gln Asp Glu Glu Gln Val Lys
1               5               10              15
Ser Phe Leu Glu Asn Met Glu Val Glu Cys Asn Tyr His Cys Tyr His
            20              25              30
Glu Lys Asp Pro Asp Gly Cys Tyr Arg Leu Val Asp Tyr Leu Glu Gly
            35              40              45
Ile Arg Lys Asn Phe Asp Glu Ala Ala Lys Val Leu Lys Phe Asn Cys
        50              55              60
Glu Glu Asn Gln His Ser Asp Ser Cys Tyr Lys Leu Gly Ala Tyr Tyr
65              70              75              80
Val Thr Gly Lys Gly Gly Leu Thr Gln Asp Leu Lys Ala Ala Ala Arg
            85              90              95
Cys Phe Leu Met Ala Cys Glu Lys Pro Gly Lys Lys Ser Ile Ala Ala
            100             105             110
Cys His Asn Val Gly Leu Leu Ala His Asp Gly Gln Val Asn Glu Asp
            115             120             125
Gly Gln Pro Asp Leu Gly Lys Ala Arg Asp Tyr Tyr Thr Arg Ala Cys
```

```
         130                    135                    140
Asp Gly Gly Tyr Thr Ser Ser Cys Phe Asn Leu Ser Ala Met Phe Leu
145                    150                    155                    160
Gln Gly Ala Pro Gly Phe Pro Lys Asp Met Asp Leu Ala Cys Lys Tyr
                   165                    170                    175
Ser Met Lys Ala Cys Asp Leu Gly His Ile Trp Ala Cys Ala Asn Ala
                   180                    185                    190
Ser Arg Met Tyr
         195
```

<210> 4721
<211> 1385
<212> DNA
<213> Homo sapiens

<400> 4721

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nncaacagct ccgacaaggt actacgatga tatatatttt gattctgatt ccgaggatga
60
agacagagtt tagggactgg acttgcagtg taaacagaga cgctgcaaat tgcttgtgga
120
cggtgtaggc cgctgcaggc caccatgaac cggcttccgg atgactacga cccctacgcg
180
gttgaagagc ctagcgacga ggagccggct ttgagcagct ctgaggatga agtggatgtg
240
cttttacatg gaactcctga ccaaaaacga aaactcatca gagaatgtct taccggagaa
300
agtgaatcat ctagtgaaga tgaatttgaa aaggagatgg aagctgaatt aaattctacc
360
atgaaaacaa tggaggacaa gttatcctct ctgggaactg gatcttcctc aggaaatgga
420
aaagttgcaa cagctccgac aaggtactac gatgatatat attttgattc tgattccgag
480
gatgaagaca gagcagtaca ggtgaccaag aaaaaaaga agaaacaaca aagattcca
540
acaaatgacg aattactgta tgatcctgaa aaagataaca gagatcaggc ctgggttgat
600
gcacagagaa ggggttacca tggtttggga ccacagagat cacgtcaaca acagcctgtt
660
ccaaatagtg atgctgtctt gaattgtcct gcctgcatga ccacactttg ccttgattgc
720
caaaggcatg aatcatacaa aactcaatat agagcaatgt ttgtaatgaa ttgttctatt
780
aacaaagagg aggttctaag atataaagcc tcagagaaca ggaagaaaag gcgggtccat
840
aagaagatga ggtctaaccg ggaagatgct ʒctgagaagg cagagacaga tgtggaagaa
900
atctatcacc cagtcatgtg cactgaatgt tccactgaag tggcagtcta cgacaaggat
960
gaagtctttc attttttcaa tgttttagca agccattcct aaacagccca actggcatʃt
1020
aattacccaa tactgtatat aaggcaaata tggacagtta ctttcctctt gcctgttcat
1080
atccttcagt gacattgagg aagcagtgtt tctcttttta aaggagaata gttgtcaacc
1140
```

```
ttcattcatc tcttacatct ctcaccctct cctttttttt ttctttgatt ttccccctta
1200
ttgatgggac tgatattcat tctgtttttg atgaacattt ggaaactgtc gggcttttta
1260
ttaaagctct gtagaattaa aatgttctgg aattataagc aatctttgtt tctgagtgtt
1320
atttttattt tggatatagc tttgatgtaa ttaaactgga aactctttcc tcaaaaaaaa
1380
agctt
1385
```

<210> 4722
<211> 285
<212> PRT
<213> Homo sapiens

<400> 4722

```
Met Asn Arg Leu Pro Asp Asp Tyr Asp Pro Tyr Ala Val Glu Glu Pro
 1               5                  10                  15
Ser Asp Glu Glu Pro Ala Leu Ser Ser Ser Glu Asp Glu Val Asp Val
                20                  25                  30
Leu Leu His Gly Thr Pro Asp Gln Lys Arg Lys Leu Ile Arg Glu Cys
            35                  40                  45
Leu Thr Gly Glu Ser Glu Ser Ser Ser Glu Asp Glu Phe Glu Lys Glu
        50                  55                  60
Met Glu Ala Glu Leu Asn Ser Thr Met Lys Thr Met Glu Asp Lys Leu
65                  70                  75                  80
Ser Ser Leu Gly Thr Gly Ser Ser Ser Gly Asn Gly Lys Val Ala Thr
                85                  90                  95
Ala Pro Thr Arg Tyr Tyr Asp Asp Ile Tyr Phe Asp Ser Asp Ser Glu
            100                 105                 110
Asp Glu Asp Arg Ala Val Gln Val Thr Lys Lys Lys Lys Lys Lys Gln
        115                 120                 125
His Lys Ile Pro Thr Asn Asp Glu Leu Leu Tyr Asp Pro Glu Lys Asp
        130                 135                 140
Asn Arg Asp Gln Ala Trp Val Asp Ala Gln Arg Arg Gly Tyr His Gly
145                 150                 155                 160
Leu Gly Pro Gln Arg Ser Arg Gln Gln Gln Pro Val Pro Asn Ser Asp
                165                 170                 175
Ala Val Leu Asn Cys Pro Ala Cys Met Thr Thr Leu Cys Leu Asp Cys
                180                 185                 190
Gln Arg His Glu Ser Tyr Lys Thr Gln Tyr Arg Ala Met Phe Val Met
            195                 200                 205
Asn Cys Ser Ile Asn Lys Glu Glu Val Leu Arg Tyr Lys Ala Ser Glu
        210                 215                 220
Asn Arg Lys Lys Arg Arg Val His Lys Lys Met Arg Ser Asn Arg Glu
225                 230                 235                 240
Asp Ala Ala Glu Lys Ala Glu Thr Asp Val Glu Glu Ile Tyr His Pro
                245                 250                 255
Val Met Cys Thr Glu Cys Ser Thr Glu Val Ala Val Tyr Asp Lys Asp
                260                 265                 270
Glu Val Phe His Phe Phe Asn Val Leu Ala Ser His Ser
            275                 280                 285
```

```
<210> 4723
<211> 1213
<212> DNA
<213> Homo sapiens

<400> 4723
tttttttttt tttttttttt tttttttttt ttttccggta tccactggaa gttttatttc
60
tttagggttc tatcccaacc agtcgcttaa aaaccaagta acacagacct gaggggtggg
120
ggctggggac tgcacctccc tcctactcat ggtggacagc agtggggact agggaggggc
180
aggagaggtg gctgacgcca ggcagcagca gcagtgatgg ggccacgacg ccacagagca
240
agctccatcc tcccccagac cctggtggga gtccctgtgg gttggggtgg ggagtgggga
300
gaacccaccc caggccctcc ctctcccttc cccagacagt ctcctttcgg gctcaaccca
360
tttcttccgg caggagactg aggcacacag agaggaggaa gtgggagagg aggacgaggg
420
aggggcaggn gtggcagcac aaatgaaggc agaggtgaga ggcgtgggca aggccactcc
480
accccacac ccaccccaga gaggggcgag gaagccacac catcacgcag catgtcgggg
540
ggacaaggcg gggtttaagg ctgagggggc ccggggcagg cgggcctcgg gcctcagtca
600
aagccgtgcc cagtcgctgt gctctgagtc gtattccagc tcggcgccca cacacttgac
660
accatccagc agcatgggcg tgccgtggtg ccggtccatg acgcgggcct gcaccgtcac
720
gcgcacacag gtgccagtgc caccttcgca ggctagcagt atctcctctt tgaggacgcc
780
ctctttgtgc gccgagtact cacacttgac actataacct tcagggacgg gcaccacgct
840
gaggagcttg aggtgcaggc tggggacagg tgcctcgcgg acatccttgc tcagcctgtg
900
cactgggggc agagtgaagg taatctcata cctgtgcagg atcttcagga agccaacctt
960
gaccagaaag ctgctgtcac tctcctgggt gaccatgacc accgagtcat gcagcttctc
1020
atcaaagtgg acgtggctgt gggatccttc tgcatcgtgg cctgccgcaa agcggatact
1080
ccggactctg ggcttgttgc ccttgttggc tgcagccatg acgccctcc ctgccacgca
1140
gctcctgcca gacaccgcca ctcacgctca gcagcctccc atgctccagg acaccagcg
1200
ggagccttgc tgt
1213

<210> 4724
<211> 54
<212> PRT
<213> Homo sapiens
```

<400> 4724
Met Gly Pro Arg Arg His Arg Ala Ser Ser Ile Leu Pro Gln Thr Leu
1   5   10   15
Val Gly Val Pro Val Gly Trp Gly Gly Glu Trp Gly Glu Pro Thr Pro
            20   25   30
Gly Pro Pro Ser Pro Phe Pro Arg Gln Ser Pro Phe Gly Leu Asn Pro
        35   40   45
Phe Leu Pro Ala Gly Asp
    50

<210> 4725
<211> 366
<212> DNA
<213> Homo sapiens

<400> 4725
nnctttcttg aaggtgaatt aggtagaagc cgtaggaccc ctgcaggggg gagaggggcc
60
atgcttgcaa tagacacggc ttcagacatc ctggcacatg tccacgtgta ctctcgcctg
120
tgcgcatgtg cacgtgtgta tatgcatatg tgcacaggtg cctgtgcctg tgtgaacaca
180
tgttctcacg tgtgtacctg cntctcttgc ccatgcntgt acgtgcacac gtgcctctgt
240
atgcatgcat gtatagctgt gtgcccatac cctcacgtga gaatacatat gcgcttgtgc
300
cttcacctct gcatgcatgc tagtgtgctc ctgcgtgcat gggtgtgcat ctgtgcctgc
360
acgcgt
366

<210> 4726
<211> 122
<212> PRT
<213> Homo sapiens

<400> 4726
Xaa Phe Leu Glu Gly Glu Leu Gly Arg Ser Arg Arg Thr Pro Ala Gly
1   5   10   15
Gly Arg Gly Ala Met Leu Ala Ile Asp Thr Ala Ser Asp Ile Leu Ala
            20   25   30
His Val His Val Tyr Ser Arg Leu Cys Ala Cys Ala Arg Val Tyr Met
        35   40   45
His Met Cys Thr Gly Ala Cys Ala Cys Val Asn Thr Cys Ser His Val
    50   55   60
Cys Thr Cys Xaa Ser Cys Pro Cys Xaa Tyr Val His Thr Cys Leu Cys
65   70   75   80
Met His Ala Cys Ile Ala Val Cys Pro Tyr Pro His Val Arg Ile His
                85   90   95
Met Arg Leu Cys Leu His Leu Cys Met His Ala Ser Val Leu Leu Arg
            100   105   110
Ala Trp Val Cys Ile Cys Ala Cys Thr Arg
        115   120

<210> 4727
<211> 2031
<212> DNA
<213> Homo sapiens

<400> 4727
tttttttttt gagacggagt ccacacccgt cacctgggct ggagtgcaat ggtgtgatct
60
cagctcactg caacctctgt ctcctgggtt cacatgattc tcctgcctca gcctcccaag
120
tagctgggat tacagggacc caccaccaca cccggctaat tttttttgta tttttactag
180
agacggggtt tcactatgtt ggccagactg gtctcgaact cctaacctca tgatccgctc
240
actttggcct cccaaagtgc tgggattaca gccgtgagcc accgcacctg tctgcgttc
300
acttacttct tcacttcctc gatggcctcc ggcaaccggc ggcaggtggt aagtagcagg
360
gagactgcga gttcggcggt ggtatctgtc aggacatctg gggtgtagcc aactcggatc
420
ccacgcttct tgatttcatc caaagccaag tggtcgatgc ccacagacat ggtgctgatg
480
actttgagat tggccccggc ccagctacat tcccgggcca gcttctgtac tgccaggtcc
540
gggtcggcgg ctgcactgcg gatgagaccg gtgcgactca tgaaggtgtt cgtcacccgc
600
aggatacccg ccgagggtag ggtcgcgctc gcccgggcgg cagactgtga ggtggagcag
660
tgggactcgg atgagcccat ccctgccaag gagctagagc gaggtgtggc gggggcccac
720
ggcctgctct gcctcctctc cgaccacgtg gacaagagga tcctggatgc tgcaggggcc
780
aatctcaaag tcatcagcac catgtctgtg ggcatcgacc acttggcttt ggatgaaatc
840
aagaagcgtg ggatccgagt tggctacacc ccagatgtcc tgacagatac caccgccgaa
900
ctcgcagtct ccctgctact taccacctgc cgccggttgc cggaggccat cgaggaagtg
960
aagaatggtg gctggacctc gtggaagccc ctctggctgt gtggctatgg actcacgcag
1020
agcactgtcg gcatcatcgg gctggggcgc ataggccagg ccattgctcg gcgtctgaaa
1080
ccattcggtg tccagagatt tctgtacaca gggcgccagc ccaggcctga ggaagcagcg
1140
gaattccagg cagagtttgt gtctacccct gagctggctg cccaatctga tttcatcgtc
1200
gtggcctgct ccttaacacc tgcaaccgag ggactctgca acaaggactt cttccagaag
1260
atgaaggaaa cagctgtgtt catcaacatc agcaggggcg acgtcgtaaa ccaggacgac
1320
ctgtaccagg ccttggccag tggtaagatt gcagctgctg gactggatgt gacgagccca
1380
gaaccactgc ctacaaacca ccctctcctg accctgaaga actgtgtgat tctgccccac
1440

```
attggcagtg  ccacccacag  aacccgcaac  accatgtcct  tgttggcagc  taacaacttg
1500
ctggctggcc  tgagagggga  gccgatgcct  agtgaactca  agctgtagcc  aaacagtaga
1560
gatggagggc  cgggaagcaa  accgtgccct  ggtattgtca  gacacaccca  ggcttgattt
1620
ggatccacag  gcagagccaa  gggaaggtgt  gattctctga  ggaaagagtg  attctgatat
1680
atgtacttgg  cgcaaatgtg  tccaacacca  atgtgacaga  ctgaccccaa  caccctccag
1740
tcacaacaac  tcacgtggac  tgtcctccct  cagggcttcc  aggatagcct  tcttttcttc
1800
gggcaagccc  tagcccaaga  ccttgcctcc  ttggatcttt  ccccccagccg  ccttcttcaa
1860
tatctagatg  acctccttct  ctgtagcccc  tccctaaaaa  actcccaaac  tcacactgcc
1920
acccttctga  atttccttac  taataaaggc  tatagggtct  ccccttttaaa  gaacagcttt
1980
ccacccctac  cgggacctac  ttaggagttc  aaccttcccc  cgggtctcga  g
2031


<210> 4728
<211> 328
<212> PRT
<213> Homo sapiens

<400> 4728
Met Arg Pro Val Arg Leu Met Lys Val Phe Val Thr Arg Arg Ile Pro
 1               5                   10                  15
Ala Glu Gly Arg Val Ala Leu Ala Arg Ala Ala Asp Cys Glu Val Glu
               20                  25                  30
Gln Trp Asp Ser Asp Glu Pro Ile Pro Ala Lys Glu Leu Glu Arg Gly
           35                  40                  45
Val Ala Gly Ala His Gly Leu Leu Cys Leu Leu Ser Asp His Val Asp
       50                  55                  60
Lys Arg Ile Leu Asp Ala Ala Gly Ala Asn Leu Lys Val Ile Ser Thr
65                  70                  75                  80
Met Ser Val Gly Ile Asp His Leu Ala Leu Asp Glu Ile Lys Lys Arg
               85                  90                  95
Gly Ile Arg Val Gly Tyr Thr Pro Asp Val Leu Thr Asp Thr Thr Ala
               100                 105                 110
Glu Leu Ala Val Ser Leu Leu Leu Thr Thr Cys Arg Arg Leu Pro Glu
           115                 120                 125
Ala Ile Glu Glu Val Lys Asn Gly Gly Trp Thr Ser Trp Lys Pro Leu
       130                 135                 140
Trp Leu Cys Gly Tyr Gly Leu Thr Gln Ser Thr Val Gly Ile Ile Gly
145                 150                 155                 160
Leu Gly Arg Ile Gly Gln Ala Ile Ala Arg Arg Leu Lys Pro Phe Gly
               165                 170                 175
Val Gln Arg Phe Leu Tyr Thr Gly Arg Gln Pro Arg Pro Glu Glu Ala
               180                 185                 190
Ala Glu Phe Gln Ala Glu Phe Val Ser Thr Pro Glu Leu Ala Ala Gln
           195                 200                 205
Ser Asp Phe Ile Val Val Ala Cys Ser Leu Thr Pro Ala Thr Glu Gly
```

```
           210                     215                   220
Leu Cys Asn Lys Asp Phe Phe Gln Lys Met Lys Glu Thr Ala Val Phe
225                     230                   235                   240
Ile Asn Ile Ser Arg Gly Asp Val Val Asn Gln Asp Asp Leu Tyr Gln
                245                   250                   255
Ala Leu Ala Ser Gly Lys Ile Ala Ala Ala Gly Leu Asp Val Thr Ser
                260                   265                   270
Pro Glu Pro Leu Pro Thr Asn His Pro Leu Leu Thr Leu Lys Asn Cys
            275                   280                   285
Val Ile Leu Pro His Ile Gly Ser Ala Thr His Arg Thr Arg Asn Thr
        290                   295                   300
Met Ser Leu Leu Ala Ala Asn Asn Leu Leu Ala Gly Leu Arg Gly Glu
305                     310                   315                   320
Pro Met Pro Ser Glu Leu Lys Leu
                325
```

```
<210> 4729
<211> 753
<212> DNA
<213> Homo sapiens

<400> 4729
ngctagcagc agcccgacca cgcgttaccg cacgctcgcg cctttccctt gacacggcgg
60
acgccggagg attggggcgg caatttgtct tttccttttt tattaaaatt attttttcctg
120
cctgttgttg gatttgggga aatttttttgt ttgttttttta tgatttgtat ttgactgaga
180
gaaacccact gaagacgtct gcgtgagaat agagaccacc gaggccgact cgcgggccgc
240
tgcacccacc gccaaggaca aaaggagccc agcgctacta gctgcacccg attcctccca
300
gtgcttagca tgaagaaggc cgaaatggga cgattcagta tttccccgga tgaagacagc
360
agcagctaca gttccaacag cgacttcaac tactcctacc ccaccaagca agctgctctg
420
aaaagccatt atgcagatgt agatcctgaa aaccagaact ttttacttga atcgaatttg
480
gggaagaaga agtatgaaac agaatttcat ccaggtacta cttcctttgg aatgtcagta
540
tttaatctga gcaatgcgat tgtgggcagt ggaatccttg ggctttctta tgccatggct
600
aatactggaa ttgctctttt tataattctc ttgacatttg tgtcaatatt ttccctgtat
660
tctgttcatc tccttttgaa gactgccaat gaaggagggt ctttattata tgaacaattg
720
ggatataagg catctggatt agttggaaag ctt
753
```

```
<210> 4730
<211> 148
<212> PRT
<213> Homo sapiens
```

<400> 4730
Met Lys Lys Ala Glu Met Gly Arg Phe Ser Ile Ser Pro Asp Glu Asp
1   5   10   15
Ser Ser Ser Tyr Ser Ser Asn Ser Asp Phe Asn Tyr Ser Tyr Pro Thr
            20   25   30
Lys Gln Ala Ala Leu Lys Ser His Tyr Ala Asp Val Asp Pro Glu Asn
        35   40   45
Gln Asn Phe Leu Leu Glu Ser Asn Leu Gly Lys Lys Lys Tyr Glu Thr
        50   55   60
Glu Phe His Pro Gly Thr Thr Ser Phe Gly Met Ser Val Phe Asn Leu
65   70   75   80
Ser Asn Ala Ile Val Gly Ser Gly Ile Leu Gly Leu Ser Tyr Ala Met
                85   90   95
Ala Asn Thr Gly Ile Ala Leu Phe Ile Ile Leu Leu Thr Phe Val Ser
            100   105   110
Ile Phe Ser Leu Tyr Ser Val His Leu Leu Leu Lys Thr Ala Asn Glu
        115   120   125
Gly Gly Ser Leu Leu Tyr Glu Gln Leu Gly Tyr Lys Ala Ser Gly Leu
        130   135   140
Val Gly Lys Leu
145

<210> 4731
<211> 2417
<212> DNA
<213> Homo sapiens

<400> 4731
tttttttttt tttttcagac aaggtaccat tttattcctt ataaaatata tttcatattg
60
ttgctgtaaa aacattacat ttcacatttt taaaaaattt tttaacagta aaaataatac
120
ttggaagaca gctgaggaaa aaggcgccaa taagacaaac tcacagatgg gatttatctc
180
cctcttgctt tttttttttt tttttgcccc tggtaaaagt cagaacctgg gatgaccaga
240
aagtaacagg acagatttct cccagcaaat cagtctccac aaccaaatga atattgttct
300
ccaaggagtc aagctataga ctcacaatga caacgtggcc atggctcaaa acactctctg
360
aaattacaaa attgctttct gagccaattt aaaagtcaca tgattgaatc caagctattt
420
tactttaaat ggtccttttg ctttgcacct gagacctcgc ttggccacag acgtcattcg
480
ctggactccc tgggcactaa atgagtgtct agcatcctta aggctgctca acacacagcc
540
ccagactctg aatatgattc caagaaatat tctgaaaaaa gtcacatcgc tggaataaac
600
agtttcccaa gataactgct ttgaaaacca gtcccgttag tttctaaaag cccacctacg
660
gcaccttcct tccatcagag tctgctgccc gggtgggctg ggaaggaggg agatacaaag
720
aagaaagtag gcatgatcac tgggtcggtt cccaagccac cctcacccctc caagaaggca
780

```
tgaatggaac aaccccgaga acagagcacg tgtgaagaac caacacgaca ggcacgggat
840
ggcagcactg gtggaaggga ggcaaggagg ccgccagtgc caaggaggag aggggcaca
900
agcgcaggca gggaaggtgg caccaaaacc tagtaagaac aaagcaaaac caccgtggtt
960
tccacactgc tctctccctt tattcctctc tttcctgccc tgtataccaa cggcataaga
1020
agcctgcaca aagagaaaaa tccgtatatc cagttatatc tacacggtcc aaactggggg
1080
cggggggaat tcaaacagct ttctaaagac gagacggcag tgaaaactct gagggagagg
1140
ggaaggggag ccctcctga gcgaagttcc catgtgtcaa gaacgtgccc tcccctcccc
1200
atgaggacct gaagctgggg gttgtcttgg gaagtgaggg gggttgggaa acaccatcag
1260
cagctgccag ctcttaattc tcaaggagat cgaagggaca ggaaggagag ccctgcgcca
1320
cctcaggcta gcctggcttt gagctttacc aagagacaga attccacata catttttttt
1380
tttttactaa gttataaaaa aaaaaacccc atcaccaaag acacctgtgc acaagtgtct
1440
gtccccttctg tcaccaacct agggcactac acccttccca acatcatgac cctactgcca
1500
ggtctacaga ttttgtaaca ctcaaagtgt cctgcattaa aaagcacgtg tctatttcct
1560
acgtgaaggg gccaagggag ccctggtggc ccaaatatct tcacccagga ctgggagggc
1620
ggcctcgatg acaaccaagg ggtggatgct gacactccat cccaggacag gtggctgggt
1680
aggattccct gagcccctga cagctgggac atagggccag gacttgtacc cgaggcagct
1740
gggcagtggg cagtcacatt ccagtaggcc ctgaggaatc cccaaataag tcacgctggg
1800
aggaaagtga dacaccaaaa cagaaacatg ccctgccatc cgggcgtggc tcactctgtc
1860
ttcgcgcagg gctggttggc atggtgctac actcccgaga cctccctcct tctccccaag
1920
aacagctctg cttatcgaca tgcacgcagc ccaggctccc ctagatccct ggaggctcca
1980
gaaacaccaa gggccaaaac gccagcagcc actaacccaa acccacgtct tcctcctgtc
2040
atttcctcat cctgacgctc acgggtgcaa ggactctcct tggccttcct catcctgctt
2100
tcaggcagca aacagaaatg gggaaatccc tggtggggcc aggagacaga aaggaacctc
2160
cagaacctcc ctgggtctct cccggccacc caaataaaag aaaactttaa tcagtaaagg
2220
cttctgaata catcgtaaaa gaaaacaaag catttctgag gcgtcctttc aataaccgga
2280
ggaaggcggc gtcaggaggg tgcttcctcg ggtcagagca gagagtttcc agacgctcaa
2340
accctccagg agttcctcga ggaaagagga gagaatgatc aaggtagtgt ttaactgcca
2400
```

```
cattccaaaa agtgaat
2417
```

```
<210> 4732
<211> 129
<212> PRT
<213> Homo sapiens
```

```
<400> 4732
Met Ser Ile Ser Arg Ala Val Leu Gly Glu Lys Glu Gly Gly Leu Gly
1               5                   10                  15
Ser Val Ala Pro Cys Gln Pro Ala Leu Arg Glu Asp Arg Val Ser His
            20                  25                  30
Ala Arg Met Ala Gly His Val Ser Val Leu Val Ser His Phe Pro Pro
        35                  40                  45
Ser Val Thr Tyr Leu Gly Ile Pro Gln Gly Leu Leu Glu Cys Asp Cys
    50                  55                  60
Pro Leu Pro Ser Cys Leu Gly Tyr Lys Ser Trp Pro Tyr Val Pro Ala
65                  70                  75                  80
Val Arg Gly Ser Gly Asn Pro Thr Gln Pro Pro Val Leu Gly Trp Ser
                85                  90                  95
Val Ser Ile His Pro Leu Val Val Ile Glu Ala Ala Leu Pro Val Leu
            100                 105                 110
Gly Glu Asp Ile Trp Ala Thr Arg Ala Pro Leu Ala Pro Ser Arg Arg
            115                 120                 125
Lys
```

```
<210> 4733
<211> 543
<212> DNA
<213> Homo sapiens
```

```
<400> 4733
nntccggagc tgctggtact cccgattgga gacgtagaac cgttacttgt cgagggcctt
60
agcggccgcc gtgaccctct cggggatccc acgatgttct tctacctgag caagaaaatt
120
tccattccca ataacgtgaa gctgcagtgt gtatcctgga caaggaaca agggttcata
180
gcatgcggtg gtgaagatgg attactgaaa gttttgaaat tagagacgca gacagatgat
240
gcaaaattga ggggccttgc agcccccagt aacctttcta tgaatcagac tcttgaaggt
300
catagtggtt ctgttcaagt tgtaacatgg aatgagcagt atcagaagtt gactaccagt
360
gatgaaaacg ggcttatcat tgtgtggatg ttatataaag gctcttggat tgaggagatg
420
atcaacaatc gaaataaatc agttgttcgc agtatgagct ggaatgctga cggacagaag
480
atctgcattg tatatgaaga tggggctgtg atagttggtt cagtggatgg caatcgtatt
540
tgg
543
```

```
<210> 4734
<211> 181
<212> PRT
<213> Homo sapiens

<400> 4734
Xaa Pro Glu Leu Leu Val Leu Pro Ile Gly Asp Val Glu Pro Leu Leu
 1               5                  10                  15
Val Glu Gly Leu Ser Gly Arg Arg Asp Pro Leu Gly Asp Pro Thr Met
            20                  25                  30
Phe Phe Tyr Leu Ser Lys Lys Ile Ser Ile Pro Asn Asn Val Lys Leu
        35                  40                  45
Gln Cys Val Ser Trp Asn Lys Glu Gln Gly Phe Ile Ala Cys Gly Gly
        50                  55                  60
Glu Asp Gly Leu Leu Lys Val Leu Lys Leu Glu Thr Gln Thr Asp Asp
65                  70                  75                  80
Ala Lys Leu Arg Gly Leu Ala Ala Pro Ser Asn Leu Ser Met Asn Gln
                85                  90                  95
Thr Leu Glu Gly His Ser Gly Ser Val Gln Val Val Thr Trp Asn Glu
            100                 105                 110
Gln Tyr Gln Lys Leu Thr Thr Ser Asp Glu Asn Gly Leu Ile Ile Val
        115                 120                 125
Trp Met Leu Tyr Lys Gly Ser Trp Ile Glu Glu Met Ile Asn Asn Arg
        130                 135                 140
Asn Lys Ser Val Val Arg Ser Met Ser Trp Asn Ala Asp Gly Gln Lys
145                 150                 155                 160
Ile Cys Ile Val Tyr Glu Asp Gly Ala Val Ile Val Gly Ser Val Asp
                165                 170                 175
Gly Asn Arg Ile Trp
            180


<210> 4735
<211> 300
<212> DNA
<213> Homo sapiens

<400> 4735
ntggtcttct cagtacagca tggtggctgg ggcaggccga gagaatggca tggagacgcc
60
gatgcacgag aacccggagt gggagaaggc ccgtcaggcc ctggccagca tcagcaagtc
120
aggagctgcc ggcggctctg ccaagtccag cagcaatggg cctgtggcca gtgcacagta
180
cgtgtcccag gcaaaagcct cagctttgca gcagcagcag tactaccagt ggtaccagca
240
ggacaactat gcctacccct acagctacta ctatcccatg cccccaggcc ccggcatgga
300


<210> 4736
<211> 93
<212> PRT
<213> Homo sapiens
```

<400> 4736
Met Val Ala Gly Ala Gly Arg Glu Asn Gly Met Glu Thr Pro Met His
1   5   10   15
Glu Asn Pro Glu Trp Glu Lys Ala Arg Gln Ala Leu Ala Ser Ile Ser
            20   25   30
Lys Ser Gly Ala Ala Gly Gly Ser Ala Lys Ser Ser Ser Asn Gly Pro
        35   40   45
Val Ala Ser Ala Gln Tyr Val Ser Gln Ala Lys Ala Ser Ala Leu Gln
    50   55   60
Gln Gln Gln Tyr Tyr Gln Trp Tyr Gln Gln Asp Asn Tyr Ala Tyr Pro
65   70   75   80
Tyr Ser Tyr Tyr Tyr Pro Met Pro Pro Gly Pro Gly Met
                85   90

<210> 4737
<211> 2602
<212> DNA
<213> Homo sapiens

<400> 4737
cctagggggc tctcgcggtt ggggaacata gatggctgaa gacagaatct agagccttca
60
aataatgtgg agatgtttcc accttcaggt tccactgggc tgattccccc ctcccacttt
120
caagctcggc ccctttcaac tctgccaaga atggctccca cctggctctc agacattccc
180
ctggtccaac ccccaggcca tcaagatgtc tcagagaggc ggctagacac ccagagacct
240
caagtgacca tgtgggaacg ggatgtttcc agtgacaggc aggagccagg gcggagaggc
300
aggtcctggg ggctggaggg gtcacaggcc ctgagccagc aggctgaggt gatcgttcgg
360
cagctgcaag agctgcggcg gctggaggag gaggtccggc tcctgcggga gacctcgctg
420
cagcagaaga tgaggctaga ggcccaggcc atggagctag aggctctggc acgggcggag
480
aaggccggcc gagctgaggc tgagggcctg cgtgctgctt tggctggggc tgaggttgtc
540
cggaagaact tggaagaggg gaggcagcgg agctggaag aggttcagag gctgcaccaa
600
gagcagctgt cctctttgac acaggctcac gaggaggctc tttccagttt gaccagcaag
660
gctgagggct tggagaagtc tctgagtagt ctggaaacca aagagcagg ggaagccaag
720
gagctggccg aggctcagag ggaggccgag ctgcttcgga agcagctgag caagacccag
780
gaagacttgg aggctcaggt gaccctggtt gagaatctaa gaaaatatgt tggggaacaa
840
gtcccttctg aggtccacag ccagacatgg gaactggagc gacagaagct tctggaaacc
900
atgcagctct tgcaggagga ccgggacagc ctgcatgcca ccgcggagct gctgcaggtg
960
cgggtgcaga gcctcacaca catcctcgcc ctgcaggagg aggagctgac caggaaggtt
1020

3914

```
caaccttcag attccctgga gcctgagttt accaggaagt gccagtccct gctgaaccgc
1080
tggcgggaga aggtgtttgc cctcatggtg cagctaaagg cccaggagct ggaacacagt
1140
gactctgtta agcagctgaa gggacaggtg gcctcactcc aggaaaaagt gacatcccag
1200
agccaggagc aggccatcct gcagcgatcc ctgcaggaca aagccgcaga ggtggaggtg
1260
gagcgtatgg gtgccaaggg cctgcagttg gagctgagcc gtgctcagga ggccaggcgt
1320
tggtggcagc agcagacagc ctcagccgag gagcagctga ggcttgtggt caatgctgtc
1380
agcagctctc agatctggct cgagaccacc atggctaagg tggaaggggc tgccgcccag
1440
cttcccagcc tcaacaaccg actcagctat gctgtccgca aggtccacac cattcggggc
1500
ctgattgctc gaaagcttgc ccttgctcag ctgcgccagg agagctgtcc cctaccacca
1560
ccggtcacag atgtgagcct tgagttgcag cagttgcggg aagaacggaa ccgcctggat
1620
gcagaactgc agctgagtgc ccgcctcatc cagcaggagg tgggccgggc tcgggagcaa
1680
ggggaggcag agcggcagca gctgagcaag gtggcccagc agctggagca ggagctgcag
1740
cagacccagg agtccctggc tagcttgggg ctgcagctgg aggtagcacg ccagggccag
1800
caggagagca cagaggaggc tgccagtctg cggcaggagc tgacccagca gcaggaactc
1860
tacgggcaag ccctgcaaga aaaggtggct gaagtggaaa ctcggctgcg ggagcaactc
1920
tcagacacag agaggaggct gaacgaggct cggagggagc atgccaaggc cgtggtctcc
1980
ttgcgccaga ttcagcgcag agccgcccag gaaaaggagc ggagccagga actcaggcgt
2040
ctgcaggagg aggcccggaa ggaggagggg cagcgactgg cccggcgctt gcaggagcta
2100
gagagggata agaacctcat gctggccacc ttgcagcagg aaggtctcct ctcccgttac
2160
aagcagcagc gactgttgac agttcttcct tccctactgg ataagaagaa atctgtggtg
2220
tccagcccca ggcctccaga gtgttcagca tctgcacctg tagcagcagc agtgcccacc
2280
agggagtcca taaaagggtc cctctctgtc ctgctcgatg acctgcagga cctgagtgaa
2340
gccatttcca agaggaagc tgtttgtcaa ggagacaacc ttgacagatg ctccagctcc
2400
aatccccaga tgagcagcta agcagctgac agttggaggg aaagccagcc tggggggctgg
2460
gaggatcctg agaagtggg tggggacaga ccagcccttc cccatcctgg ggttgccctg
2520
ggggatacca gctgagtctg aattctgctc taaataaaga cgactacaga aggaaaaaaa
2580
aaaaaaaaaa aaaaaaaaaa aa
2602
```

<210> 4738
<211> 756
<212> PRT
<213> Homo sapiens

<400> 4738

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Met Ala Pro Thr Trp Leu Ser Asp Ile Pro Leu Val Gln Pro Pro Gly
1               5                  10                 15
His Gln Asp Val Ser Glu Arg Arg Leu Asp Thr Gln Arg Pro Gln Val
            20                  25                 30
Thr Met Trp Glu Arg Asp Val Ser Ser Asp Arg Gln Glu Pro Gly Arg
        35                  40                 45
Arg Gly Arg Ser Trp Gly Leu Glu Gly Ser Gln Ala Leu Ser Gln Gln
    50                  55                 60
Ala Glu Val Ile Val Arg Gln Leu Gln Glu Leu Arg Arg Leu Glu Glu
65                  70                 75                 80
Glu Val Arg Leu Leu Arg Glu Thr Ser Leu Gln Gln Lys Met Arg Leu
                85                 90                 95
Glu Ala Gln Ala Met Glu Leu Glu Ala Leu Ala Arg Ala Glu Lys Ala
            100                 105                 110
Gly Arg Ala Glu Ala Glu Gly Leu Arg Ala Ala Leu Ala Gly Ala Glu
            115                 120                 125
Val Val Arg Lys Asn Leu Glu Glu Gly Arg Gln Arg Glu Leu Glu Glu
        130                 135                 140
Val Gln Arg Leu His Gln Glu Gln Leu Ser Ser Leu Thr Gln Ala His
145                 150                 155                 160
Glu Glu Ala Leu Ser Ser Leu Thr Ser Lys Ala Glu Gly Leu Glu Lys
                165                 170                 175
Ser Leu Ser Ser Leu Glu Thr Arg Arg Ala Gly Glu Ala Lys Glu Leu
            180                 185                 190
Ala Glu Ala Gln Arg Glu Ala Glu Leu Leu Arg Lys Gln Leu Ser Lys
        195                 200                 205
Thr Gln Glu Asp Leu Glu Ala Gln Val Thr Leu Val Glu Asn Leu Arg
    210                 215                 220
Lys Tyr Val Gly Glu Gln Val Pro Ser Glu Val His Ser Gln Thr Trp
225                 230                 235                 240
Glu Leu Glu Arg Gln Lys Leu Leu Glu Thr Met Gln Leu Leu Gln Glu
                245                 250                 255
Asp Arg Asp Ser Leu His Ala Thr Ala Glu Leu Leu Gln Val Arg Val
            260                 265                 270
Gln Ser Leu Thr His Ile Leu Ala Leu Gln Glu Glu Glu Leu Thr Arg
        275                 280                 285
Lys Val Gln Pro Ser Asp Ser Leu Glu Pro Glu Phe Thr Arg Lys Cys
    290                 295                 300
Gln Ser Leu Leu Asn Arg Trp Arg Glu Lys Val Phe Ala Leu Met Val
305                 310                 315                 320
Gln Leu Lys Ala Gln Glu Leu Glu His Ser Asp Ser Val Lys Gln Leu
            325                 330                 335
Lys Gly Gln Val Ala Ser Leu Gln Glu Lys Val Thr Ser Gln Ser Gln
            340                 345                 350
Glu Gln Ala Ile Leu Gln Arg Ser Leu Gln Asp Lys Ala Ala Glu Val
        355                 360                 365
Glu Val Glu Arg Met Gly Ala Lys Gly Leu Gln Leu Glu Leu Ser Arg
```

```
        370                    375                    380
Ala Gln Glu Ala Arg Arg Trp Trp Gln Gln Gln Thr Ala Ser Ala Glu
385                    390                    395                    400
Glu Gln Leu Arg Leu Val Val Asn Ala Val Ser Ser Ser Gln Ile Trp
                405                    410                    415
Leu Glu Thr Thr Met Ala Lys Val Glu Gly Ala Ala Ala Gln Leu Pro
                420                    425                    430
Ser Leu Asn Asn Arg Leu Ser Tyr Ala Val Arg Lys Val His Thr Ile
                435                    440                    445
Arg Gly Leu Ile Ala Arg Lys Leu Ala Leu Ala Gln Leu Arg Gln Glu
        450                    455                    460
Ser Cys Pro Leu Pro Pro Pro Val Thr Asp Val Ser Leu Glu Leu Gln
465                    470                    475                    480
Gln Leu Arg Glu Glu Arg Asn Arg Leu Asp Ala Glu Leu Gln Leu Ser
                485                    490                    495
Ala Arg Leu Ile Gln Gln Glu Val Gly Arg Ala Arg Glu Gln Gly Glu
        500                    505                    510
Ala Glu Arg Gln Gln Leu Ser Lys Val Ala Gln Gln Leu Glu Gln Glu
        515                    520                    525
Leu Gln Gln Thr Gln Glu Ser Leu Ala Ser Leu Gly Leu Gln Leu Glu
        530                    535                    540
Val Ala Arg Gln Gly Gln Gln Glu Ser Thr Glu Glu Ala Ala Ser Leu
545                    550                    555                    560
Arg Gln Glu Leu Thr Gln Gln Gln Glu Leu Tyr Gly Gln Ala Leu Gln
                565                    570                    575
Glu Lys Val Ala Glu Val Glu Thr Arg Leu Arg Glu Gln Leu Ser Asp
        580                    585                    590
Thr Glu Arg Arg Leu Asn Glu Ala Arg Arg Glu His Ala Lys Ala Val
        595                    600                    605
Val Ser Leu Arg Gln Ile Gln Arg Arg Ala Ala Gln Glu Lys Glu Arg
        610                    615                    620
Ser Gln Glu Leu Arg Arg Leu Gln Glu Glu Ala Arg Lys Glu Glu Gly
625                    630                    635                    640
Gln Arg Leu Ala Arg Arg Leu Gln Glu Leu Glu Arg Asp Lys Asn Leu
                645                    650                    655
Met Leu Ala Thr Leu Gln Gln Glu Gly Leu Leu Ser Arg Tyr Lys Gln
                660                    665                    670
Gln Arg Leu Leu Thr Val Leu Pro Ser Leu Leu Asp Lys Lys Lys Ser
        675                    680                    685
Val Val Ser Ser Pro Arg Pro Pro Glu Cys Ser Ala Ser Ala Pro Val
        690                    695                    700
Ala Ala Ala Val Pro Thr Arg Glu Ser Ile Lys Gly Ser Leu Ser Val
705                    710                    715                    720
Leu Leu Asp Asp Leu Gln Asp Leu Ser Glu Ala Ile Ser Lys Glu Glu
                725                    730                    735
Ala Val Cys Gln Gly Asp Asn Leu Asp Arg Cys Ser Ser Ser Asn Pro
        740                    745                    750
Gln Met Ser Ser
        755
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<210> 4739
<211> 684
<212> DNA
<213> Homo sapiens

<400> 4739

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ggaagacttg accagtcttg gtgatgagaa ggccttcacc ctatgaacac aaccaagtct
120
tagccctctc tcctgctcct ttaaactctg aacttctagg atgggagaat gggaactttt
180
gcaggttgag attcatagtg aaatcgggtc aagaagtgat cagatgcaaa gcacagggca
240
gttcattact ataccatggc tgaggtcttc ctgggcacca ggccctgggc tcagcacttg
300
gctcagtctg caccttggac cctgccagag ccctccacag caggtgctct caggcaaggc
360
tgtgtgttgc tggccagacg ccttctgacc agcgtgcttt cttgaccaca gatcccttgg
420
ccaagcagga gggaaccatt agcagcctga ggagctggct ggctgggagc ctcggggacc
480
gcccagcctt gctcccagct cacccacaag atgtggacag ctcttgtgct catttggatt
540
ttctccttgt ccttatctga aagccatgcg gcatccaacg atccacgtaa gtgagaaagc
600
tgtgtgactg ctggatgggc ccacggtggc cacaaagcat gctgagccct tgaaagcagc
660
atctgcaaac ccaggccaac gcgt
684

<210> 4740
<211> 119
<212> PRT
<213> Homo sapiens

<400> 4740
Met Leu Leu Ser Arg Ala Gln His Ala Leu Trp Pro Pro Trp Ala His
1   5   10   15
Pro Ala Val Thr Gln Leu Ser His Leu Arg Gly Ser Leu Asp Ala Ala
                20   25   30
Trp Leu Ser Asp Lys Asp Lys Glu Lys Ile Gln Met Ser Thr Arg Ala
                35   40   45
Val His Ile Leu Trp Val Ser Trp Glu Gln Gly Trp Ala Val Pro Glu
        50   55   60
Ala Pro Ser Gln Pro Ala Pro Gln Ala Ala Asn Gly Ser Leu Leu Leu
65   70   75   80
Gly Gln Gly Ile Cys Gly Gln Glu Ser Thr Leu Val Arg Arg Arg Leu
                85   90   95
Ala Ser Asn Thr Gln Pro Cys Leu Arg Ala Pro Ala Val Glu Gly Ser
                100   105   110
Gly Arg Val Gln Gly Ala Asp
        115

<210> 4741
<211> 411
<212> DNA
<213> Homo sapiens

<400> 4741
aaatttactt ctctcaggtc aacaggtgtt tttcttcttt tttttttttt tttttccctt
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ttttttctta aaaaaaaaaa aggggttttt ctttgccccc cccgttcccc cccctttcccc
120
ttccgaaaaa aagaggggaa ttttttaaaa aacccgaaag gggggaaggg gggggtata
180
aaagataaaa tttggttttt tgggggggaa aatttggaca ccccaccctc gggtttttttt
240
tccccacccc aaaaaatttt aaaaggggggc cctaaaaaaa attttttctt taatttccaa
300
ataaaaaaaa aatggggttc caaaatcatt gaaaaatagg ggggactcca aaaccttgaa
360
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411

<210> 4742
<211> 109
<212> PRT
<213> Homo sapiens

<400> 4742
Met Ile Leu Glu Pro His Phe Phe Phe Ile Trp Lys Leu Lys Lys Lys
1   5   10   15
Phe Phe Leu Gly Pro Pro Phe Lys Ile Phe Trp Gly Gly Glu Lys Lys
            20   25   30
Pro Glu Gly Gly Val Ser Lys Phe Ser Pro Pro Lys Asn Gln Ile Leu
        35   40   45
Ser Phe Ile Pro Pro Pro Phe Pro Pro Phe Gly Phe Phe Lys Lys Phe
        50   55   60
Pro Ser Phe Phe Arg Lys Gly Lys Gly Gly Glu Arg Gly Gly Gln Arg
65   70   75   80
Lys Thr Pro Phe Phe Phe Leu Arg Lys Lys Arg Glu Lys Lys Lys Lys
                85   90   95
Lys Glu Arg Lys Thr Pro Val Asp Leu Arg Glu Val Asn
            100   105

<210> 4743
<211> 473
<212> DNA
<213> Homo sapiens

<400> 4743
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caaccggccc cacaaattct agcagtgcca agaagaagga taaaagagtt caaggtggaa
120
gagtgattga gtcccggtat ctgcagtatg aaaagaagac aacccaaaag gctcctgcag
180
gagatgggtc acagacccga gggaagatgt ctgaaggtgg aaggaaatcc agcctgctcc
240
agaaaagcaa agcagatagc agtggggtcg gaaagggtga cctgcagtcc acgttgctgg
300

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aagggcatgg cacagctcca cctgacctgg atctctctgc tattaatgac aaaagcatcg
360
tcaaaaagac gccacagtta gcaaaaacaa tatcaaagaa acctgagtca acatcatttt
420
ctgcccctcg gaaaaagagc ccggatttat ctgaagcgaa tggaatgatg gag
473
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<210> 4744
<211> 150
<212> PRT
<213> Homo sapiens
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<400> 4744
Met Ala Asp Ser Ser Gly Arg Gly Ala Gly Lys Pro Ala Thr Gly Pro
1               5                   10                  15
Thr Asn Ser Ser Ser Ala Lys Lys Lys Asp Lys Arg Val Gln Gly Gly
            20                  25                  30
Arg Val Ile Glu Ser Arg Tyr Leu Gln Tyr Glu Lys Lys Thr Thr Gln
        35                  40                  45
Lys Ala Pro Ala Gly Asp Gly Ser Gln Thr Arg Gly Lys Met Ser Glu
    50                  55                  60
Gly Gly Arg Lys Ser Ser Leu Leu Gln Lys Ser Lys Ala Asp Ser Ser
65                  70                  75                  80
Gly Val Gly Lys Gly Asp Leu Gln Ser Thr Leu Leu Glu Gly His Gly
                85                  90                  95
Thr Ala Pro Pro Asp Leu Asp Leu Ser Ala Ile Asn Asp Lys Ser Ile
            100                 105                 110
Val Lys Lys Thr Pro Gln Leu Ala Lys Thr Ile Ser Lys Lys Pro Glu
            115                 120                 125
Ser Thr Ser Phe Ser Ala Pro Arg Lys Lys Ser Pro Asp Leu Ser Glu
    130                 135                 140
Ala Asn Gly Met Met Glu
145                 150
```

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<210> 4745
<211> 666
<212> DNA
<213> Homo sapiens
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<400> 4745
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gagcagctgg atcaccttgg tgaagttcag acggaatcag caggaattca gcgtgcacag
120
attcagaaag aactttggcg aattcaggat c-catggaag ggctgagtaa acataagcag
180
caaagaggta ctacagaaat aggtatgata ggatcaaagc ctttctcaac agttaagtac
240
aaaaatgagg gtccagatta tagactctac aagagtgaac cagagttaac aacagtggca
300
gaagttgatg aatctaatgg agaagaaaaa tcagaacctg tttcagagat agaaacttca
360
gttgttaaag gttcccactt tcctgttgga gtagtccctc caagagcaaa atcaccaaca
420
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cccgaatctt cgacaatagc ttcctatgta accttgagga aaactaagaa gatgatggat
480
ctaagaacgg aaagaccaag aagtgcagtg gaacagctct gtttggctga aagtactcga
540
ccaaggatga ctgtggaaga gcaaatggaa agaataagaa gatatcaaca agcgtgcctg
600
agggagaaga aaaagggtt aaatgttatc ggtgcttcag accagtcacc cttacaaagc
660
ccttaa
666

<210> 4746
<211> 221
<212> PRT
<213> Homo sapiens

<400> 4746
Ala Trp Arg Glu Tyr Asp Lys Leu Glu Tyr Asp Val Thr Val Thr Arg
1   5   10   15
Asn Gln Met Gln Glu Gln Leu Asp His Leu Gly Glu Val Gln Thr Glu
            20   25   30
Ser Ala Gly Ile Gln Arg Ala Gln Ile Gln Lys Glu Leu Trp Arg Ile
        35   40   45
Gln Asp Val Met Glu Gly Leu Ser Lys His Lys Gln Gln Arg Gly Thr
    50   55   60
Thr Glu Ile Gly Met Ile Gly Ser Lys Pro Phe Ser Thr Val Lys Tyr
65   70   75   80
Lys Asn Glu Gly Pro Asp Tyr Arg Leu Tyr Lys Ser Glu Pro Glu Leu
                85   90   95
Thr Thr Val Ala Glu Val Asp Glu Ser Asn Gly Glu Glu Lys Ser Glu
            100   105   110
Pro Val Ser Glu Ile Glu Thr Ser Val Val Lys Gly Ser His Phe Pro
        115   120   125
Val Gly Val Val Pro Pro Arg Ala Lys Ser Pro Thr Pro Glu Ser Ser
    130   135   140
Thr Ile Ala Ser Tyr Val Thr Leu Arg Lys Thr Lys Lys Met Met Asp
145   150   155   160
Leu Arg Thr Glu Arg Pro Arg Ser Ala Val Glu Gln Leu Cys Leu Ala
                165   170   175
Glu Ser Thr Arg Pro Arg Met Thr Val Glu Glu Gln Met Glu Arg Ile
            180   185   190
Arg Arg Tyr Gln Gln Ala Cys Leu Arg Glu Lys Lys Lys Gly Leu Asn
        195   200   205
Val Ile Gly Ala Ser Asp Gln Ser Pro Leu Gln Ser Pro
    210   215   220

<210> 4747
<211> 1091
<212> DNA
<213> Homo sapiens

<400> 4747
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acgcatactg acgccaaaat ccgtgctgaa aatggaacag ggtccagccc tcggggtcct
120
ggctgcagcc tccggcactt tgcctgcgaa cagaacctgc tgtcgcggcc agatggctct
180
gcttccttcc tgcaaggtga cacctctgtc ctggcgggtg tgtacgggcc ggccgaggtg
240
aaggtcagca aagagatttt caacaaggcc acactcgaag tgatcctgag gccgaagatt
300
gggctgcctg caggggtcag tggatggcag tcaggccttg ccttcttccc actggaatct
360
tccatcatcc ctgcaggtgt tgcagagaag agccgggagc ggctgatcag gaacacgtgc
420
gaggcggtgg tgctgggcac gttgcacccc cgcacctcca tcaccgtggt gctgcaggtt
480
gtcagcgatg ccggctctct cctggcctgt tgtctgaatg ccgcctgcat ggcattggtg
540
gatgcaggtg tgcccatgcg ggctctcttc tgtggggtcg cctgcgccct ggactctgat
600
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660
tttgccctgg acagcgtgga acggaagctg ctgatgtcca gcaccaaggg gctctactca
720
gacactgagc tccagcagtg cctggctgcg gcccaggccg cttcgcaaca cgtcttccgt
780
ttctaccggg aatcgctgca gaggcgttac tccaagagct gaggcaagct ggggcaaggg
840
gccgctccca ttgcctccac ccactcaccc cctacagcct gaagcaaacc agcagcccag
900
ccttgcctct ctgacccatg ggctccttga gcctgcagct ctgtaaccac agggctcctg
960
tggggaggcc ttggcctgtg acagccccca ggcctggggg cacagatccc cccagcaagg
1020
ataacattca aaggagctca catttatgga atggatgaat caataaatta attcacttta
1080
aaaaaaaaaa a
1091

<210> 4748
<211> 273
<212> PRT
<213> Homo sapiens

<400> 4748
Xaa Cys Gln Ala Glu Val Thr Thr Ala Ser Ala Arg Gly Leu Gly Ala
1   5   10   15
Met Glu Glu Glu Thr His Thr Asp Ala Lys Ile Arg Ala Glu Asn Gly
            20   25   30
Thr Gly Ser Ser Pro Arg Gly Pro Gly Cys Ser Leu Arg His Phe Ala
        35   40   45
Cys Glu Gln Asn Leu Leu Ser Arg Pro Asp Gly Ser Ala Ser Phe Leu
    50   55   60
Gln Gly Asp Thr Ser Val Leu Ala Gly Val Tyr Gly Pro Ala Glu Val
65   70   75   80
Lys Val Ser Lys Glu Ile Phe Asn Lys Ala Thr Leu Glu Val Ile Leu

```
                        85                    90                    95
Arg Pro Lys Ile Gly Leu Pro Ala Gly Val Ser Gly Trp Gln Ser Gly
                100                   105                   110
Leu Ala Phe Phe Pro Leu Glu Ser Ser Ile Ile Pro Ala Gly Val Ala
            115                   120                   125
Glu Lys Ser Arg Glu Arg Leu Ile Arg Asn Thr Cys Glu Ala Val Val
        130                   135                   140
Leu Gly Thr Leu His Pro Arg Thr Ser Ile Thr Val Val Leu Gln Val
145                   150                   155                   160
Val Ser Asp Ala Gly Ser Leu Leu Ala Cys Cys Leu Asn Ala Ala Cys
                165                   170                   175
Met Ala Leu Val Asp Ala Gly Val Pro Met Arg Ala Leu Phe Cys Gly
            180                   185                   190
Val Ala Cys Ala Leu Asp Ser Asp Gly Thr Leu Val Leu Asp Pro Thr
            195                   200                   205
Ser Lys Gln Glu Lys Glu Ala Arg Ala Val Leu Thr Phe Ala Leu Asp
        210                   215                   220
Ser Val Glu Arg Lys Leu Leu Met Ser Ser Thr Lys Gly Leu Tyr Ser
225                   230                   235                   240
Asp Thr Glu Leu Gln Gln Cys Leu Ala Ala Ala Gln Ala Ala Ser Gln
                245                   250                   255
His Val Phe Arg Phe Tyr Arg Glu Ser Leu Gln Arg Arg Tyr Ser Lys
            260                   265                   270
Ser
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<210> 4749
<211> 2196
<212> DNA
<213> Homo sapiens

<400> 4749
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gggggcacct tccagcccta cctagacacc ttgcggcagg agctgcagca gacggaccca
120
acgctgttgt cagtagtggt ggcggttctt gcggtgctgc tgacgctagt cttctggaag
180
ttaatccgga gcagaaggag cagtcagaga gctgttcttc ttgttggcct ttgtgattcc
240
gggaaaacgt tgctctttgt caggttgtta acaggccttt atagagacac tcagacgtcc
300
attactgaca gctgtgctgt atacagagtc aacaataaca ggggcaatag tctgaccttg
360
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420
gccagggcta ttgtgtttgt tgtggatagt gcagcattcc agcgagaggt gaaagatgtg
480
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540
ttaatagcct gcaataagca agatattgca atggcaaaat cagcaaagtt aattcaacag
600
cagctggaga aagaactcaa caccttacga gttacccgtt ctgctgcccc cagcacactg
660
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gacagttcca gcactgcccc tgctcagctg gggaagaaag gcaaagagtt tgaattctca
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cagttgcccc tcaaagtgga gttcctggag tgcagtgcca agggtggaag aggggacgtg
780
ggctctgctg acatccagga cttggagaaa tggctggcta aaattgcctg agaggcagct
840
ctaaagcaca agacctggat gtgtgacaca cagttttgga aaaaggtctg tggtagtctg
900
gagttgatga ggaaggggta caagatgtgg ttagaaacat ttctttgttc tggaaacaaa
960
gtactgttga aaccagcttg gaattttttt tttttttttt ttaagttcag ttctccctta
1020
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1140
gatgagaata tggccatcac ctgaaaagtt ttcttatctt ctgtgctttt ggtccctgga
1200
aacaaatccg cctatgtatg aagctagttg atttccagtt gcactatttc cagttgcctc
1260
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gttatgaagt ttccccacat gtgaagacag gtacaaaata gcagagccaa gcagacagtg
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1980
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2040
tgcattgaga gccatggtag gagaggccca cagttctctg gagcatgcag caggggcacc
2100
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2160
agggagtgtg atcctccatg tatggcctct gcctgc
2196

<210> 4750

<211> 276
<212> PRT
<213> Homo sapiens

<400> 4750
Xaa Arg Val Ser Ser Met Ala Ser Ala Asp Ser Arg Arg Leu Ala Asp
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Gly Gly Gly Ala Gly Gly Thr Phe Gln Pro Tyr Leu Asp Thr Leu Arg
            20   25   30
Gln Glu Leu Gln Gln Thr Asp Pro Thr Leu Leu Ser Val Val Val Ala
        35   40   45
Val Leu Ala Val Leu Leu Thr Leu Val Phe Trp Lys Leu Ile Arg Ser
    50   55   60
Arg Arg Ser Ser Gln Arg Ala Val Leu Leu Val Gly Leu Cys Asp Ser
65   70   75   80
Gly Lys Thr Leu Leu Phe Val Arg Leu Leu Thr Gly Leu Tyr Arg Asp
                85   90   95
Thr Gln Thr Ser Ile Thr Asp Ser Cys Ala Val Tyr Arg Val Asn Asn
                100   105   110
Asn Arg Gly Asn Ser Leu Thr Leu Ile Asp Leu Pro Gly His Glu Ser
        115   120   125
Leu Arg Leu Gln Phe Leu Glu Arg Phe Lys Ser Ser Ala Arg Ala Ile
    130   135   140
Val Phe Val Val Asp Ser Ala Ala Phe Gln Arg Glu Val Lys Asp Val
145   150   155   160
Ala Glu Phe Leu Tyr Gln Val Leu Ile Asp Ser Met Gly Leu Lys Asn
                165   170   175
Thr Pro Ser Phe Leu Ile Ala Cys Asn Lys Gln Asp Ile Ala Met Ala
                180   185   190
Lys Ser Ala Lys Leu Ile Gln Gln Gln Leu Glu Lys Glu Leu Asn Thr
        195   200   205
Leu Arg Val Thr Arg Ser Ala Ala Pro Ser Thr Leu Asp Ser Ser Ser
    210   215   220
Thr Ala Pro Ala Gln Leu Gly Lys Lys Gly Lys Glu Phe Glu Phe Ser
225   230   235   240
Gln Leu Pro Leu Lys Val Glu Phe Leu Glu Cys Ser Ala Lys Gly Gly
                245   250   255
Arg Gly Asp Val Gly Ser Ala Asp Ile Gln Asp Leu Glu Lys Trp Leu
                260   265   270
Ala Lys Ile Ala
        275

<210> 4751
<211> 2777
<212> DNA
<213> Homo sapiens

<400> 4751
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ctcctcagcc catcaaagta ccacagttta tccccctcc tagactcact ccacgtccaa
120
actttcttcc acaggttcga cccaagcctg tggcccagaa taacattcct attgccccca
180

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gcaccacctc ccatgctcgc agctcctcag cttatccaga ggcccgtcat gctgaccaag
240
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300
gggcagactg caaccatagc caaaacgttc cccatggccc agctcaccag cattgtgata
360
gctactccag ggaccagact cgctggacct caaactgtac agcttagcaa gccaagtctt
420
gaaaaacaga cagttaaatc tcacacagaa acagatgaga aacaaacaga gagccgcacc
480
atcacccccac ctgctgcacc caaaccaaaa cgggaggaga accctcagaa acttgccttc
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600
gagcgaaaaa gaagaacaac agcaaatccg gtctacagtg gagcagtctt tgagccagag
660
cgtaagaaga gtgcagtgac atacctaaac agcacaatgc accctgggac ccggaagaga
720
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780
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840
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960
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1020
tttaaaacaa gaacgagaac aactagagca aaaggtgaaa cagctcagca attccataag
1080
taaatgcatg gaaatgaaga acaccatcct ggcccggcag aaggagatgc acagctccct
1140
ggagaaggta aaacagctga ttcgcctcat ccacggcatc gacctctcca aacctgtaga
1200
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1260
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1440
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1680
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1800
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tctaaacttt cgctactata aaaccaaaaa aaggaattga gatttcacca accccagtgc
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ccagaagagg gaaggggagt ggctggaggg agcagggggt tggacagtgt atcaaataag
1920
cagtatttaa tcacctctgg cgggggcctc gtgcaagggg agactgacac caagaacagc
1980
cagtaggttc ttctcccctg cactctgctc cctgcgcggt aaccccacca ctcctgaagc
2040
ctgcccagtc tccttccttc cctgcttggt gagtcgcgca tctccgtggt tatcccgctg
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tctcctctcc aagaacaagc agagccgggc cactagcttg cccaaggcag ggaagaagga
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tgtgtgtgtc caggaaggaa aaaaaggtgg atcagtgatt ttacttgaaa tcaagctcca
2220
tcccttttct atatttataa gaagagaaga tcttgagtga agcagcacgc gacccaggtg
2280
tgtgtgaatt gaatggagac gtttcttttc tctttctttta attttgttt ttgttctttt
2340
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2400
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2460
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2580
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<210> 4752
<211> 335
<212> PRT
<213> Homo sapiens

<400> 4752
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Leu Leu Asp Ser Leu His Val Gln Thr Phe Phe His Arg Phe Asp Pro
        35   40   45
Ser Leu Trp Pro Arg Ile Thr Phe Leu Leu Pro Pro Ala Pro Pro Pro
    50   55   60
Met Leu Ala Ala Pro Gln Leu Ile Gln Arg Pro Val Met Leu Thr Lys
65   70   75   80
Phe Thr Pro Thr Thr Leu Pro Thr Ser Gln Asn Ser Ile His Pro Val
                85   90   95
Arg Val Val Asn Gly Gln Thr Ala Thr Ile Ala Lys Thr Phe Pro Met

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                100                    105                     110
    Ala Gln Leu Thr Ser Ile Val Ile Ala Thr Pro Gly Thr Arg Leu Ala
            115                    120                     125
    Gly Pro Gln Thr Val Gln Leu Ser Lys Pro Ser Leu Glu Lys Gln Thr
        130                    135                     140
    Val Lys Ser His Thr Glu Thr Asp Glu Lys Gln Thr Glu Ser Arg Thr
    145                    150                     155                     160
    Ile Thr Pro Pro Ala Ala Pro Lys Pro Lys Arg Glu Glu Asn Pro Gln
                    165                    170                     175
    Lys Leu Ala Phe Met Val Ser Leu Gly Leu Val Thr His Asp His Leu
                180                    185                     190
    Glu Glu Ile Gln Ser Lys Arg Gln Glu Arg Lys Arg Arg Thr Thr Ala
                195                    200                     205
    Asn Pro Val Tyr Ser Gly Ala Val Phe Glu Pro Glu Arg Lys Lys Ser
        210                    215                     220
    Ala Val Thr Tyr Leu Asn Ser Thr Met His Pro Gly Thr Arg Lys Arg
    225                    230                     235                     240
    Ala Asn Glu Glu His Trp Pro Lys Gly Asp Ile His Glu Asp Phe Cys
                    245                    250                     255
    Ser Val Cys Arg Lys Ser Gly Gln Leu Leu Met Cys Asp Thr Cys Ser
                260                    265                     270
    Arg Val Tyr His Leu Asp Cys Leu Asp Pro Pro Leu Lys Thr Ile Pro
            275                    280                     285
    Lys Gly Met Trp Ile Cys Pro Arg Cys Gln Asp Gln Met Leu Lys Lys
        290                    295                     300
    Glu Glu Ala Ile Pro Trp Xaa Trp Asn Phe Ser Asn Cys Ser Phe Leu
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    Tyr Cys Leu Gln Ser Ser Lys Arg Arg Arg Glu Thr Glu Val Thr
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<210> 4753
<211> 5298
<212> DNA
<213> Homo sapiens

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420
ggataccttg gtcccagagt catcatgaag gcccttgatg agcctcccta tttgacagtg
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1980
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2160
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3780
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<210> 4754

<211> 748
<212> PRT
<213> Homo sapiens

<400> 4754

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              20   25   30

Tyr Gly Arg Gly Lys Asn Gln Lys Met Tyr Glu Ala Ser Ile Lys Asp
        35   40   45

Ser Asp Val Glu Gly Gly Glu Val Leu Tyr Leu Val His Tyr Cys Gly
    50   55   60

Trp Asn Val Arg Tyr Asp Glu Trp Ile Lys Ala Asp Lys Ile Val Arg
65   70   75   80

Pro Ala Asp Lys Asn Val Pro Lys Ile Lys His Arg Lys Lys Ile Lys
            85   90   95

Asn Lys Leu Asp Lys Glu Lys Asp Lys Asp Glu Lys Tyr Ser Pro Lys
        100   105   110

Asn Cys Lys Leu Arg Arg Leu Ser Lys Pro Pro Phe Gln Thr Asn Pro
        115   120   125

Ser Pro Glu Met Val Ser Lys Leu Asp Leu Thr Asp Ala Lys Asn Ser
    130   135   140

Asp Thr Ala His Ile Lys Ser Ile Glu Ile Thr Ser Ile Leu Asn Gly
145   150   155   160

Leu Gln Ala Ser Glu Ser Ser Ala Glu Asp Ser Glu Gln Glu Asp Glu
            165   170   175

Arg Gly Ala Gln Asp Met Asp Asn Asn Gly Lys Glu Glu Ser Lys Ile
        180   185   190

Asp His Leu Thr Asn Asn Arg Asn Asp Leu Ile Ser Lys Glu Glu Gln
    195   200   205

Asn Ser Ser Ser Leu Leu Glu Glu Asn Lys Val His Ala Asp Leu Val
    210   215   220

Ile Ser Lys Pro Val Ser Lys Ser Pro Glu Arg Leu Arg Lys Asp Ile
225   230   235   240

Glu Val Leu Ser Glu Asp Thr Asp Tyr Glu Glu Asp Glu Val Thr Lys
            245   250   255

Lys Arg Lys Asp Val Lys Lys Asp Thr Thr Asp Lys Ser Ser Lys Pro
        260   265   270

Gln Ile Lys Arg Gly Lys Arg Arg Tyr Cys Asn Thr Glu Glu Cys Leu
        275   280   285

Lys Thr Gly Ser Pro Gly Lys Lys Glu Glu Lys Ala Lys Asn Lys Glu
    290   295   300

Ser Leu Cys Met Glu Asn Ser Ser Thr Ala Leu Gln Met Lys Met Lys
305   310   315   320

Lys Asn Lys Ala Lys Met Thr Pro Thr Lys Lys Tyr Asn Gly Leu Glu
        325   330   335

Glu Lys Arg Lys Ser Leu Arg Thr Thr Gly Phe Tyr Ser Gly Phe Ser
        340   345   350

Glu Val Ala Glu Lys Arg Ile Lys Leu Leu Asn Asn Ser Asp Glu Arg
    355   360   365

Leu Gln Asn Ser Arg Ala Lys Asp Arg Lys Asp Val Trp Ser Ser Ile
    370   375   380

Gln Gly Gln Trp Pro Lys Lys Thr Leu Lys Glu Leu Phe Ser Asp Ser

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Asp Thr Glu Ala Ala Ala Ser Pro Pro His Pro Ala Pro Glu Glu Gly
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Val Ala Glu Glu Ser Leu Gln Thr Val Ala Glu Glu Glu Ser Cys Ser
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Pro Ser Val Glu Leu Glu Lys Pro Pro Pro Val Asn Val Asp Ser Lys
      435              440              445
Pro Ile Glu Glu Lys Thr Val Glu Val Asn Asp Arg Lys Ala Glu Phe
  450              455              460
Pro Ser Ser Gly Ser Asn Ser Val Leu Asn Thr Pro Pro Thr Thr Pro
465              470              475              480
Glu Ser Pro Ser Ser Val Thr Val Thr Glu Gly Ser Arg Gln Gln Ser
              485              490              495
Ser Val Thr Val Ser Glu Pro Leu Ala Pro Asn Gln Glu Glu Val Arg
          500              505              510
Ser Ile Lys Ser Glu Thr Asp Ser Thr Ile Glu Val Asp Ser Val Ala
          515              520              525
Gly Glu Leu Gln Asp Leu Gln Ser Glu Gly Asn Ser Ser Pro Ala Gly
      530              535              540
Phe Asp Ala Ser Val Ser Ser Ser Ser Ser Asn Gln Pro Glu Pro Glu
545              550              555              560
His Pro Glu Lys Ala Cys Thr Gly Gln Lys Arg Val Lys Asp Ala Gln
              565              570              575
Gly Gly Gly Ser Ser Ser Lys Lys Gln Lys Arg Ser His Lys Ala Thr
              580              585              590
Val Val Asn Asn Thr Lys Lys Gly Lys Gly Thr Asn Ser Ser Asp Ser
          595              600              605
Glu Glu Leu Ser Ala Gly Glu Ser Ile Thr Lys Ser Gln Pro Val Lys
      610              615              620
Ser Val Ser Thr Gly Met Lys Ser His Ser Thr Lys Ser Pro Ala Arg
625              630              635              640
Thr Gln Ser Pro Gly Lys Cys Gly Lys Asn Gly Asp Lys Asp Pro Asp
              645              650              655
Leu Lys Glu Pro Ser Asn Arg Leu Pro Lys Val Tyr Lys Trp Ser Phe
          660              665              670
Gln Met Ser Asp Leu Glu Asn Met Thr Ser Ala Glu Arg Ile Thr Ile
          675              680              685
Leu Gln Glu Lys Leu Gln Glu Asn Gln Lys His Tyr Leu Ser Leu Lys
          690              695              700
Ser Glu Val Ala Ser Ile Asp Arg Arg Arg Lys Arg Leu Lys Lys Lys
705              710              715              720
Glu Arg Glu Ser Ala Ala Thr Ser Ser Ser Ser Ser Ser Pro Ser Ser
              725              730              735
Ser Ser Ile Asn Ser Cys Cys Tyr Val Asn Phe Ser
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<210> 4755
<211> 2093
<212> DNA
<213> Homo sapiens

<400> 4755
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420
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1680

3934

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<210> 4756
<211> 188
<212> PRT
<213> Homo sapiens

<400> 4756
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            20                  25                  30
Ser Glu Asp Gly Thr Leu Arg Ser Leu Glu Pro Glu Pro Gln Gln Ser
        35                  40                  45
Leu Glu Asp Gly Ser Pro Ala Lys Gly Glu Pro Ser Gln Ala Trp Arg
    50                  55                  60
Glu Gln Arg Arg Pro Ser Thr Ser Ser Ala Ser Gly Gln Trp Ser Pro
65                  70                  75                  80
Thr Pro Glu Trp Val Leu Ser Trp Lys Ser Lys Leu Pro Leu Gln Thr
                85                  90                  95
Ile Met Arg Leu Leu Gln Val Leu Val Pro Gln Val Glu Lys Ile Cys
            100                 105                 110
Ile Asp Lys Gly Leu Thr Asp Glu Ser Glu Ile Leu Arg Phe Leu Gln
        115                 120                 125
His Gly Thr Leu Val Gly Leu Leu Pro Val Pro His Pro Ile Leu Ile
        130                 135                 140
Arg Lys Tyr Gln Ala Asn Ser Gly Thr Ala Met Trp Phe Arg Thr Tyr
145                 150                 155                 160
Met Trp Gly Val Ile Tyr Leu Arg Asn Val Asp Pro Pro Val Trp Tyr
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Asp Thr Asp Val Lys Leu Phe Glu Ile Gln Arg Val
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<210> 4757
<211> 272
<212> DNA
<213> Homo sapiens

<400> 4757
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3935

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272

<210> 4758
<211> 90
<212> PRT
<213> Homo sapiens

<400> 4758
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            20   25   30
Leu Ala Ala Gly Asp Val Asp Gly Asp Val Phe Val Phe Ser Tyr Ser
        35   40   45
Cys Gln Glu Gly Glu Thr Lys Glu Leu Val Ile Arg Ser His Leu Lys
        50   55   60
Ala Cys Arg Ala Val Ala Phe Ser Glu Asp Gly Gln Lys Leu Ile Thr
65   70   75   80
Val Ser Lys Asp Lys Ala Ile His Val Leu
                85   90

<210> 4759
<211> 1087
<212> DNA
<213> Homo sapiens

<400> 4759
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540
taactcagag ctgatgaaca aaagcccccc cacccccaat gcctgcctcc tcactcctcc
600

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660
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720
aaggactgag gtcggactac agagggaaga gggacttccc ttgactgggt tgtgtttctt
780
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840
ccttgccatg ccaggtggtt tggggaccaa gatgttgggg gggtgaatca ggatcctaat
900
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960
ttcatctgct tcctccttag ggaaggctgg gatatgatga gagattccag cccaagcccg
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1080
aactgtg
1087
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<210> 4760
<211> 78
<212> PRT
<213> Homo sapiens

<400> 4760

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1               5                   10                  15
Thr Thr Ala Ala Thr Val Ser Val Pro Gln Asp Gly Cys Arg Leu Arg
            20                  25                  30
Lys Gly Gln Thr Lys Thr Leu Phe Glu Phe Ser Ser Ser Arg Ala Gly
        35                  40                  45
Phe Leu Pro Leu Trp Asp Val Ala Ala Thr Asp Phe Gly Gln Thr Asn
    50                  55                  60
Gln Lys Phe Gly Phe Glu Leu Gly Pro Val Cys Phe Ser Ser
65                  70                  75
```

<210> 4761
<211> 3973
<212> DNA
<213> Homo sapiens

<400> 4761

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ggccccgggc ccgctcgccc gccgccccgc atggagctgt cagccatcgg cgagcaggtg
120
ttcgccgtgg agagcatccg gaagaagcgc gtgcggaagg gtaaagtcga gtatctggtg
180
aagtggaaag gatggccccc aaagtacagc acgtgggagc cagaagagca catcttggac
240
ccccgcctcg tcatggccta cgaggagaag gaggagagag accgagcatc ggggtatagg
300
aagagaggtc cgaaacccaa gcggcttctg ctgcagcggc tgtacagcat ggacctgcgg
360
```

```
agctcccaca aggccaaggg caaggagaag ctctgcttct ccctgacgtg cccactcggc
420
agcgggagcc ctgaggggggt ggtcaaggcg ggggcacctg agctggtgga caagggcccc
480
ttggtgccca ccctgccctt cccgctccgc aagccccgaa aggcccacaa gtacctgcgg
540
ctctcgcgca agaagttccc gccccgcggg cccaacctgg agagccacag ccatcgacgg
600
gagctcttcc tgcaggagcc accggcccca gacgtcctgc aggcggctgg cgagtgggag
660
cctgctgcgc agcccccctga agaggaggca gatgccgacc tggccgaggg gcccctccc
720
tggacacctg cgctcccctc aagtgaggtg accgtgaccg acatcaccgc caactccatc
780
accgtcacct tccgcgaggc ccaggcagct gagggcttct tccgagaccg cagtgggaag
840
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900
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960
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1020
ccacgaggcc tcaggctggg gatggagaga gttgctctgg gagttggggt accacccccca
1080
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1140
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1260
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1320
gagtggggcg ggaggaaggg gcaggaggaa gggttgaggt tacttggggc gagtcccttc
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1440
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1560
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1620
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1680
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1740
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1800
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1860
ccctgtcctt cctcccgtga ggggttcttg ttctttctga ctcaggtgac ttttcagccc
1920
ttccaattcc cctctttttc tgccctcccc tccaactcag ccaacccagg tgtgggcagt
1980
```

```
cagggaggga gggagtgtcc caccacgttc tcagggcagc ccttgactcc taagcccctt
2040
cctccttcca ttctgcatcc cctccccatc caacctaaat gccacagctg gggctgagct
2100
gtattcctgt ggagggacct ctgccgtgcc tctctgaggt caggctgtgc tgtgtgatgg
2160
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2220
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2280
tgtaggggag acaaaaccag attggggggc ccaaggggag catggaaaag gccggctccc
2340
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2400
aagtttgaga cctgcccgcc ctcctcgcag ctctgctctg tgtcctcagg aagtcacaga
2460
gtctactgag gcaaggagag ggtgattctt tccccaaatc ccttcttccc tggttcccaa
2520
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2580
cctgagtctc tctttccttc ctcctcgatc tttagttgtc cacggtcaat tcagtgcttc
2640
cattggggggg acagtcccct ccgggatgac ctgattcacc tccagcccag ggaatggaat
2700
ctagaggaat acgtggggtg ggtctggaca aggagcggca ggaatcacca cccatctcca
2760
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gaggggtgcc cagcggaggt aaagatgata gagggttgtg ggggtctct agttgaatgt
2880
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3060
cagcagcagg acacatcttt cctcttactc aggcccttta tggcccatgg ggaactccgt
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3180
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3300
gccgtgcagg cctccttcca gcccagagtg gcccagtaga gcaaggcaga cagtgacctc
3360
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3420
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3480
gggcactttt ccttttgtgg tggggggtgc ggaggaggta cccccacccc tggcacagcc
3540
gcctggaatg caggactgtc actgctgttc gggtgatgac ctcgttgcca agctcctcct
3600
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3939

gtccccttgt tctgggggca ggcgctgtgc ttctgtgagg tggtttagct tttgctttcg
3660

aagtggccag ctgcggccac caggtctcag cacaagagcg cttcctttgc acagaatgag
3720

cttcgagctt tgttcagact aaatgaatgt atctgggagg ggtcgggggc acgagttgat
3780

tccaagcaca tgcctttgct gagtgtgtgt gtgctgggag agtcagagtg gatgtagagc
3840

gcggttttat ttttgtactg acattggtaa gagactgtat agcatctatt tatttagatg
3900

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3960

aagaaaaaaa aaa
3973

<210> 4762
<211> 251
<212> PRT
<213> Homo sapiens

<400> 4762
Met Gln Leu Ser Ala Ile Gly Glu Gln Val Phe Ala Val Glu Ser Ile
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Arg Lys Lys Arg Val Arg Lys Gly Lys Val Glu Tyr Leu Val Lys Trp
            20   25   30
Lys Gly Trp Pro Pro Lys Tyr Ser Thr Trp Glu Pro Glu Glu His Ile
            35   40   45
Leu Asp Pro Arg Leu Val Met Ala Tyr Glu Glu Lys Glu Glu Arg Asp
        50   55   60
Arg Ala Ser Gly Tyr Arg Lys Arg Gly Pro Lys Pro Lys Arg Leu Leu
65   70   75   80
Leu Gln Arg Leu Tyr Ser Met Asp Leu Arg Ser Ser His Lys Ala Lys
                85   90   95
Gly Lys Glu Lys Leu Cys Phe Ser Leu Thr Cys Pro Leu Gly Ser Gly
            100   105   110
Ser Pro Glu Gly Val Val Lys Ala Gly Ala Pro Glu Leu Val Asp Lys
            115   120   125
Gly Pro Leu Val Pro Thr Leu Pro Phe Pro Leu Arg Lys Pro Arg Lys
        130   135   140
Ala His Lys Tyr Leu Arg Leu Ser Arg Lys Lys Phe Pro Pro Arg Gly
145   150   155   160
Pro Asn Leu Glu Ser His Ser His Arg Arg Glu Leu Phe Leu Gln Glu
                165   170   175
Pro Pro Ala Pro Asp Val Leu Gln Ala Ala Gly Glu Trp Glu Pro Ala
                180   185   190
Ala Gln Pro Pro Glu Glu Glu Ala Asp Ala Asp Leu Ala Glu Gly Pro
            195   200   205
Pro Pro Trp Thr Pro Ala Leu Pro Ser Ser Glu Val Thr Val Thr Asp
            210   215   220
Ile Thr Ala Asn Ser Ile Thr Val Thr Phe Arg Glu Ala Gln Ala Ala
225   230   235   240
Glu Gly Phe Phe Arg Asp Arg Ser Gly Lys Phe
                245   250

<210> 4763
<211> 2158
<212> DNA
<213> Homo sapiens

<400> 4763
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120
agtgatgatt ttgacagtcc agtcaaggga cctttgtgta aatcagttac tccaacaaaa
180
gagtttttga aagatgaaat aaaacaagag gaagagactt gtaaaaggat ctctacaatc
240
actgctttgg gtcatgaagg gaaacagctg gtaaatggag aagttagtga tgaaagggta
300
gctccaaatt ttaagacaga accaatagag acaaagtttt atgagacaaa ggaagagagc
360
tatagcccct ctaaggacag aaatatcatc acggagggaa atggaacaga gtccttaaat
420
tctgtcataa caagtatgaa aacaggtgag cttgagaaag aaacagcccc tttgaggaaa
480
gatgcagata gttcaatatc agtcttagag atccatagtc aaaaagcaca aatagaggaa
540
cccgatcctc cagaaatgga aacttctctt gattcttctg agatggcaaa agatctctct
600
tcaaaaactg ctttatcttc caccgagtcg tgtaccatga aaggtgaaga gaagtctccc
660
aaaactaaga aggataagcg cccaccaatc ctagaatgtc ttgaaaagtt agagaagtcc
720
aaaaagactt ttcttgataa ggacgcacaa agattgagtc aataccaga agaagttcca
780
aagagtactc tagagtcaga aaagcctggc tctcctgagg cagctgaaac ttctccacca
840
tctaatatca ttgaccactg tgagaaacta gcctcagaaa aagaagtggt agaatgccag
900
agtacaagta ctgttggtgg ccagtctgtg aaaaaagtag acctagaaac cctaaaagag
960
gattctgagt tcacaaaggt agaaatggat aatctggaca atgcccagac ctctggcata
1020
gaggagcctt ctgagacaaa gggttctatg caaaaaagca aattcaaata taagttggtt
1080
cctgaagaag aaaccactgc ctcagaaaat acagagataa cctctgaaag gcagaaagag
1140
ggcatcaaat taacaatcag gatatcaagt cggaaaaaga agcccgattc tccccccaaa
1200
gttctagaac cagaaaacaa gcaagagaag acagaaaagg aagaggagaa aacaaatgtg
1260
ggtcgtactt taagaagatc tccaagaata tctagaccca ctgcaaaagt ggctgagatc
1320
agagatcaga aagctgataa aaaaagaggg gaaggagaag atgaggtgga agaagagtca
1380
acagctttgc aaaaaactga caaaaaggaa attttgaaaa aatcagagaa agatacaaat
1440

3941

tctaaagtaa gcaaggtaaa acccnnaaag gcaaagttcg atggactggt tctcggacac
1500

gtggcagatg gaaatattcc agcaatgatg aaagtgaagg gtctggcagt gaaaaatcat
1560

ctgcagcttc agaagaggag gaagaaaagg aaagtgaaga agccatccnt agcagatgat
1620

gatgaaccat gcaaaaaatg tggccttcca aaccatcctg agctaattct tctgtgtgac
1680

tcttgcgata gtggatacca tactgcctgc cttcgccctc ctctgatgat catcccagat
1740

ggagaatggt tctgcccacc ttgccaacat aaactgctct gtgaaaaatt agaggaacag
1800

ttgcaggatt tggatgttgc cttaaagaag aaagagcgtg ccgaacgaag aaaagaacgc
1860

ttggtgtatg ttggtatcag tattgaaaac atcattcctc cacaagagcc agactttct
1920

gaagatcaag aagaaaagaa aaaagattca aaaaaatcca agcaaactt gcttgaaagg
1980

aggtcaacaa gaacaaggaa atgtataagc tacagatttg atgagtttga tgaagcaatt
2040

gatgaagcta ttgaagatga catcaaagaa gccgatggag gaggagttgg ccgaggaaaa
2100

gatatctcca ccatcacagg tcatcgtggg aaagacatct ctactatttt ggatgaaa
2158

<210> 4764
<211> 719
<212> PRT
<213> Homo sapiens

<400> 4764
Xaa Phe Gly Gly Asn Ile Lys Ser Ser His Glu Ile Thr Glu Lys Ser
 1   5   10   15
Thr Glu Glu Thr Glu Lys Leu Lys Asn Asp Gln Gln Ala Lys Ile Pro
            20   25   30
Leu Lys Lys Arg Glu Ile Lys Leu Ser Asp Asp Phe Asp Ser Pro Val
        35   40   45
Lys Gly Pro Leu Cys Lys Ser Val Thr Pro Thr Lys Glu Phe Leu Lys
    50   55   60
Asp Glu Ile Lys Gln Glu Glu Glu Thr Cys Lys Arg Ile Ser Thr Ile
65   70   75   80
Thr Ala Leu Gly His Glu Gly Lys Gln Leu Val Asn Gly Glu Val Ser
                85   90   95
Asp Glu Arg Val Ala Pro Asn Phe Lys Thr Glu Pro Ile Glu Thr Lys
            100   105   110
Phe Tyr Glu Thr Lys Glu Glu Ser Tyr Ser Pro Ser Lys Asp Arg Asn
        115   120   125
Ile Ile Thr Glu Gly Asn Gly Thr Glu Ser Leu Asn Ser Val Ile Thr
    130   135   140
Ser Met Lys Thr Gly Glu Leu Glu Lys Glu Thr Ala Pro Leu Arg Lys
145   150   155   160
Asp Ala Asp Ser Ser Ile Ser Val Leu Glu Ile His Ser Gln Lys Ala
                165   170   175
Gln Ile Glu Glu Pro Asp Pro Pro Glu Met Glu Thr Ser Leu Asp Ser

```
                    180                      185                       190
Ser Glu Met Ala Lys Asp Leu Ser Ser Lys Thr Ala Leu Ser Ser Thr
            195                      200                       205
Glu Ser Cys Thr Met Lys Gly Glu Glu Lys Ser Pro Lys Thr Lys Lys
        210                      215                       220
Asp Lys Arg Pro Pro Ile Leu Glu Cys Leu Glu Lys Leu Glu Lys Ser
225                      230                      235                       240
Lys Lys Thr Phe Leu Asp Lys Asp Ala Gln Arg Leu Ser Pro Ile Pro
                245                      250                       255
Glu Glu Val Pro Lys Ser Thr Leu Glu Ser Glu Lys Pro Gly Ser Pro
                260                      265                       270
Glu Ala Ala Glu Thr Ser Pro Pro Ser Asn Ile Ile Asp His Cys Glu
            275                      280                       285
Lys Leu Ala Ser Glu Lys Glu Val Val Glu Cys Gln Ser Thr Ser Thr
        290                      295                       300
Val Gly Gly Gln Ser Val Lys Lys Val Asp Leu Glu Thr Leu Lys Glu
305                      310                      315                       320
Asp Ser Glu Phe Thr Lys Val Glu Met Asp Asn Leu Asp Asn Ala Gln
                325                      330                       335
Thr Ser Gly Ile Glu Glu Pro Ser Glu Thr Lys Gly Ser Met Gln Lys
                340                      345                       350
Ser Lys Phe Lys Tyr Lys Leu Val Pro Glu Glu Glu Thr Thr Ala Ser
            355                      360                       365
Glu Asn Thr Glu Ile Thr Ser Glu Arg Gln Lys Glu Gly Ile Lys Leu
        370                      375                       380
Thr Ile Arg Ile Ser Ser Arg Lys Lys Lys Pro Asp Ser Pro Pro Lys
385                      390                      395                       400
Val Leu Glu Pro Glu Asn Lys Gln Glu Lys Thr Glu Lys Glu Glu Glu
                405                      410                       415
Lys Thr Asn Val Gly Arg Thr Leu Arg Arg Ser Pro Arg Ile Ser Arg
            420                      425                       430
Pro Thr Ala Lys Val Ala Glu Ile Arg Asp Gln Lys Ala Asp Lys Lys
        435                      440                       445
Arg Gly Glu Gly Glu Asp Glu Val Glu Glu Glu Ser Thr Ala Leu Gln
    450                      455                       460
Lys Thr Asp Lys Lys Glu Ile Leu Lys Lys Ser Glu Lys Asp Thr Asn
465                      470                      475                       480
Ser Lys Val Ser Lys Val Lys Pro Xaa Lys Ala Lys Phe Asp Gly Leu
                485                      490                       495
Val Leu Gly His Val Ala Asp Gly Asn Ile Pro Ala Met Met Lys Val
            500                      505                       510
Lys Gly Leu Ala Val Lys Asn His Leu Gln Leu Gln Lys Arg Arg Lys
        515                      520                       525
Lys Arg Lys Val Lys Lys Pro Ser Xaa Ala Asp Asp Asp Glu Pro Cys
    530                      535                       540
Lys Lys Cys Gly Leu Pro Asn His Pro Glu Leu Ile Leu Leu Cys Asp
545                      550                      555                       560
Ser Cys Asp Ser Gly Tyr His Thr Ala Cys Leu Arg Pro Pro Leu Met
                565                      570                       575
Ile Ile Pro Asp Gly Glu Trp Phe Cys Pro Pro Cys Gln His Lys Leu
            580                      585                       590
Leu Cys Glu Lys Leu Glu Glu Gln Leu Gln Asp Leu Asp Val Ala Leu
        595                      600                       605
Lys Lys Lys Glu Arg Ala Glu Arg Arg Lys Glu Arg Leu Val Tyr Val
```

```
      610                    615                    620
Gly Ile Ser Ile Glu Asn Ile Ile Pro Pro Gln Glu Pro Asp Phe Ser
625                    630                    635                    640
Glu Asp Gln Glu Glu Lys Lys Lys Asp Ser Lys Lys Ser Lys Ala Asn
                  645                    650                    655
Leu Leu Glu Arg Arg Ser Thr Arg Thr Arg Lys Cys Ile Ser Tyr Arg
                  660                    665                    670
Phe Asp Glu Phe Asp Glu Ala Ile Asp Glu Ala Ile Glu Asp Asp Ile
              675                    680                    685
Lys Glu Ala Asp Gly Gly Gly Val Gly Arg Gly Lys Asp Ile Ser Thr
          690                    695                    700
Ile Thr Gly His Arg Gly Lys Asp Ile Ser Thr Ile Leu Asp Glu
705                    710                    715
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<210> 4765
<211> 1707
<212> DNA
<213> Homo sapiens


<400> 4765
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120
agggctccct cttcaacgtg gcgaccagtg ccctgaccc tgctgacttt gtgcttggtg
180
ctgctgatag ggctggcagc cctgggggctt ttgttttttc agtactacca gctctccaat
240
actggtcaag acaccatttc tcaaatggaa gaaagattag gaaatacgtc ccaagagttg
300
caatctcttc aagtccagaa tataaagctt gcaggaagtc tgcagcatgt ggctgaaaaa
360
ctctgtcgtg agctgtataa caaagctgga gcacacaggt gcagcccttg tacagaacaa
420
tggaaatggc atggagacaa ttgctaccag ttctataaag acagcaaaag ttgggaggac
480
tgtaaatatt tctgccttag tgaaaactct accatgctga agataaacaa acaagaagac
540
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600
ttgcgccctg acagtggcaa ggcctggctg tggatggatg gaaccccttt cacttctgaa
660
ctgttccata ttataataga tgtcaccagc ccaagaagca gagactgtgt ggccatcctt
720
aatgggatga tcttctcaaa ggactgcaaa g attgaagc gttgtgtctg tgagagaagg
780
gcaggaatgg tgaagccaga gagcctccat gtcccccctg aaacattagg cgaaggtgac
840
tgattcgccc tctgcaacta caaatagcag agtgagccag gcggtgccaa agcaagggct
900
agttgagaca ttgggaaatg aacataatc aggaaagact atctctctga ctagtacaaa
960
atgggttctc gtgtttcctg ttcaggatca ccagcatttc tgagcttggg tttatgcacg
1020
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tatttaacag tcacaagaag tcttatttac atgccaccaa ccaacctcag aaacccataa
1080
tgtcatctgc cttcttggct tagagataac ttttagctct ctttcttctc aatgtctaat
1140
atcacctccc tgttttcatg tcttccttac acttggtgga ataagaaact ttttgaagta
1200
gaggaaatac attgaggtaa catccttttc tctgacagtc aagtagtcca tcagaaattg
1260
gcagtcactt cccagattgt accagcaaat acacaaggaa ttctttttgt ttgtttcagt
1320
tcatactagt cccttcccaa tccatcagta aagaccccat ctgccttgtc catgccgttt
1380
cccaacaggg atgtcacttg atatgagaat ctcaaatctc aatgccttat aagcattcct
1440
tcctgtgtcc attaagactc tgataattgt ctcccctcca taggaatttc tcccaggaaa
1500
gaaatatatc cccatctccg tttcatatca gaactaccgt ccccgatatt cccttcagag
1560
agattaaaga ccagaaaaaa gtgagcctct tcatctgcac ctgtaatagt ttcagttcct
1620
attttcttcc attgacccat atttatacct ttcaggtact gaagatttaa taataataaa
1680
tgtaaatact gtgaaaaaaa aaaaaaa
1707
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<210> 4766
<211> 280
<212> PRT
<213> Homo sapiens
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<400> 4766
Leu Gln Ala Lys Tyr Asn Ser Thr Arg Asp Met Leu Asp Asp Asp Gly
1               5                   10                  15
Asp Thr Thr Met Ser Leu His Ser Gln Ala Ser Ala Thr Thr Arg His
            20                  25                  30
Pro Glu Pro Arg Arg Thr Glu His Arg Ala Pro Ser Ser Thr Trp Arg
        35                  40                  45
Pro Val Ala Leu Thr Leu Leu Thr Leu Cys Leu Val Leu Leu Ile Gly
        50                  55                  60
Leu Ala Ala Leu Gly Leu Leu Phe Phe Gln Tyr Tyr Gln Leu Ser Asn
65                  70                  75                  80
Thr Gly Gln Asp Thr Ile Ser Gln Met Glu Glu Arg Leu Gly Asn Thr
                85                  90                  95
Ser Gln Glu Leu Gln Ser Leu Gln Val Gln Asn Ile Lys Leu Ala Gly
            100                 105                 110
Ser Leu Gln His Val Ala Glu Lys Leu Cys Arg Glu Leu Tyr Asn Lys
            115                 120                 125
Ala Gly Ala His Arg Cys Ser Pro Cys Thr Glu Gln Trp Lys Trp His
        130                 135                 140
Gly Asp Asn Cys Tyr Gln Phe Tyr Lys Asp Ser Lys Ser Trp Glu Asp
145                 150                 155                 160
Cys Lys Tyr Phe Cys Leu Ser Glu Asn Ser Thr Met Leu Lys Ile Asn
                165                 170                 175
Lys Gln Glu Asp Leu Glu Phe Ala Ala Ser Gln Ser Tyr Ser Glu Phe
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```
                 180                    185                    190
Phe Tyr Ser Tyr Trp Thr Gly Leu Leu Arg Pro Asp Ser Gly Lys Ala
         195                    200                    205
Trp Leu Trp Met Asp Gly Thr Pro Phe Thr Ser Glu Leu Phe His Ile
     210                    215                    220
Ile Ile Asp Val Thr Ser Pro Arg Ser Arg Asp Cys Val Ala Ile Leu
225                    230                    235                    240
Asn Gly Met Ile Phe Ser Lys Asp Cys Lys Glu Leu Lys Arg Cys Val
             245                    250                    255
Cys Glu Arg Arg Ala Gly Met Val Lys Pro Glu Ser Leu His Val Pro
         260                    265                    270
Pro Glu Thr Leu Gly Glu Gly Asp
         275                    280
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<210> 4767
<211> 1380
<212> DNA
<213> Homo sapiens
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<400> 4767
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120
gacgtgagcg cctacagtgg gctcggggag gactctgcgg gcagtgccct ggaggaggac
180
gacgaagacg acgaggggga tggggagccc ccctacgagc ccgagtcggg gtgcgtggag
240
atcccggggc tgtcggagga ggaggaccca gccccgagcc ggaagatcca tttcagcacg
300
gcgcccatcc aagtgttcag cacttactcc aacgaggatt acgatcgtcg caacgaggat
360
gtggatccca tggcagcctc tgctgagtac gagctggaga agcgtgtgga gaggttggag
420
ctgttccctg tggagctgga gaaggactcc gagggcctgg gcatcagcat catcggcatg
480
ggcgccgggg cagacatggg cctggagaag ctgggtatct tcgtcaagac cgtgacggag
540
ggtggtgcgg cccatcggga tggcaggatc caggtgaatg atctcctggt ggaggtggat
600
ggaacaagtc tggtgggagt gacccagagc ttcgcggcgt ctgtgctccg gaacaccaag
660
ggccgagtgc ggtttatgat tggccgggag cggccgggag agcagagcga gtggcccag
720
ctaattcagc agactttgga acaggagcga tggcagcggg agatgatgga gcagagatac
780
gcccagtatg gggaggatga cgaggagacg ggagagtatg ccactgacga ggatgaggag
840
ctgagcccca cgttcccggg tggtgagatg gccatcgagg tgtttgagct agcggagaac
900
gaggatgcac tgtcccctgt ggacatggag cccgagaagc tggtgcacaa gttcaaggag
960
ctccagatca gcatgcggt cactgaggca gagatccagc agctgaaaag aaagctgcag
1020
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agcctggagc aggagaaggg gcgctggcgg gtggagaagg cgcagttgga gcagagtgtg
1080
gaggagaaca aggagcgcat ggagaaactg gaaggctact ggggtgaggc ccagagcctg
1140
tgccaggctg tggacgagca cctgcgggag actcaggcgc agtaccaggc cctggagcgc
1200
aagtacagca aggccaagcg cctcatcaag gactaccagc agaaggagat cgagttcctg
1260
aaaaaggaga ctgcacagcg tcgggttctg gaggagtcgg agctggccag aaaggaggag
1320
atggacaagc tcctggacaa gatctcagaa ctggaaggaa acttgcaaac actgaggaat
1380

<210> 4768
<211> 460
<212> PRT
<213> Homo sapiens

<400> 4768
Xaa Arg Arg Gly Ala Val Ala Pro Pro Glu Arg Gly Val Gly Asn Gly
1   5   10   15
Arg Ala Pro Glu Val Ala Pro Glu Glu Val Asp Glu Ser Lys Lys Glu
            20   25   30
Asp Phe Ser Glu Ala Asp Leu Val Asp Val Ser Ala Tyr Ser Gly Leu
        35   40   45
Gly Glu Asp Ser Ala Gly Ser Ala Leu Glu Glu Asp Asp Glu Asp Asp
    50   55   60
Glu Gly Asp Gly Glu Pro Pro Tyr Glu Pro Glu Ser Gly Cys Val Glu
65   70   75   80
Ile Pro Gly Leu Ser Glu Glu Glu Asp Pro Ala Pro Ser Arg Lys Ile
                85   90   95
His Phe Ser Thr Ala Pro Ile Gln Val Phe Ser Thr Tyr Ser Asn Glu
            100   105   110
Asp Tyr Asp Arg Arg Asn Glu Asp Val Asp Pro Met Ala Ala Ser Ala
        115   120   125
Glu Tyr Glu Leu Glu Lys Arg Val Glu Arg Leu Glu Leu Phe Pro Val
    130   135   140
Glu Leu Glu Lys Asp Ser Glu Gly Leu Gly Ile Ser Ile Ile Gly Met
145   150   155   160
Gly Ala Gly Ala Asp Met Gly Leu Glu Lys Leu Gly Ile Phe Val Lys
                165   170   175
Thr Val Thr Glu Gly Gly Ala Ala His Arg Asp Gly Arg Ile Gln Val
            180   185   190
Asn Asp Leu Leu Val Glu Val Asp Gly Thr Ser Leu Val Gly Val Thr
        195   200   205
Gln Ser Phe Ala Ala Ser Val Leu Arg Asn Thr Lys Gly Arg Val Arg
    210   215   220
Phe Met Ile Gly Arg Glu Arg Pro Gly Glu Gln Ser Glu Val Ala Gln
225   230   235   240
Leu Ile Gln Gln Thr Leu Glu Gln Glu Arg Trp Gln Arg Glu Met Met
                245   250   255
Glu Gln Arg Tyr Ala Gln Tyr Gly Glu Asp Asp Glu Glu Thr Gly Glu
            260   265   270
Tyr Ala Thr Asp Glu Asp Glu Glu Leu Ser Pro Thr Phe Pro Gly Gly

```
          275                    280                    285
Glu Met Ala Ile Glu Val Phe Glu Leu Ala Glu Asn Glu Asp Ala Leu
          290                    295                    300
Ser Pro Val Asp Met Glu Pro Glu Lys Leu Val His Lys Phe Lys Glu
305                    310                    315                    320
Leu Gln Ile Lys His Ala Val Thr Glu Ala Glu Ile Gln Gln Leu Lys
                  325                    330                    335
Arg Lys Leu Gln Ser Leu Glu Gln Glu Lys Gly Arg Trp Arg Val Glu
                  340                    345                    350
Lys Ala Gln Leu Glu Gln Ser Val Glu Glu Asn Lys Glu Arg Met Glu
                  355                    360                    365
Lys Leu Glu Gly Tyr Trp Gly Glu Ala Gln Ser Leu Cys Gln Ala Val
          370                    375                    380
Asp Glu His Leu Arg Glu Thr Gln Ala Gln Tyr Gln Ala Leu Glu Arg
385                    390                    395                    400
Lys Tyr Ser Lys Ala Lys Arg Leu Ile Lys Asp Tyr Gln Gln Lys Glu
                  405                    410                    415
Ile Glu Phe Leu Lys Lys Glu Thr Ala Gln Arg Arg Val Leu Glu Glu
          420                    425                    430
Ser Glu Leu Ala Arg Lys Glu Glu Met Asp Lys Leu Leu Asp Lys Ile
          435                    440                    445
Ser Glu Leu Glu Gly Asn Leu Gln Thr Leu Arg Asn
          450                    455                    460
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<210> 4769
<211> 1533
<212> DNA
<213> Homo sapiens

<400> 4769
ttttttttttt ttttttttttt ttttttttttt ttttttttttt tttttttgtcc aaaactcttc
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120
ggtcacacga ggggcatttt ccttgttgta agtgtagtct aaaccagtag gaaggaggtt
180
taattgccaa aaccagcgag aactcgggca ctgtggatac tacagtgggc agctgaacga
240
ggaccaagga gaatgtctaa gaggcctcca gccctgcgct cagtgaagac aggacaggaa
300
caacagagca tacatacctt ggaagggtgt gttctgatat actcgtatgg aaagttctga
360
caggttttct ccctgggaag tgcagcacat accccaacac actggctctg ccagtgtgcc
420
aatcccagat ggtgcttgct ttgtgtgcac ccacacccaa acccctgccc tccatatgc
480
tcttctgtgt gcccaggtag gccctgccct caggcagcag cttctgaaca cattcctctt
540
ggcgcagaca aaagaaagta cttcgtctgt ggaattcgag gctgagcctg agttctagca
600
caagaagacc gttgcagtcc agagatgaga aactggacca gaggcaaatc atgaacagaa
660
cgggagtcaa gagaaggggt ttctaagatg gagaagtggg ggcgggtgtg gatccagtgg
720
```

3948

```
gatgtggctt cccccaggttg caacccccaag gaagtctctg gaagcagcac cagtcctgat
780
gggggagcag aagagctgcc atcctcagtc agggtccgag tcagggtccg aggagagctg
840
ctgctccata gtctcgcaca tggcatcctg cagggacgta agatgacccc ggggactcat
900
ccccattggc tggatgactc tgttcctgtt ggggaaaggt gcagtggggc tggagagctt
960
gtcaaacatg gtcaccagct tcatggcctc gtgctccttc tgctcctctg tcatgccctc
1020
cataggggtta ggcggcttct cctccaccct cccggtcaca gggtttatgc tggctttggc
1080
ttccttgtac tcatctgtgt ctgtgtcctc atcctctgag tactggcccct cgggccggcc
1140
tcctgccatg aggcccctgg cagccagaag gccagcagca ttcccatagc ctgtgtactt
1200
gatgaatcgg ggcacactct cagagcacag gacaaacaag aactcggcag ccaccctctt
1260
cacatctgtg tccaggtgtg tcatgaggcg gacaagcttg tttcggagca ggtcccccac
1320
ctcaggccga gtcctcacat cccgcagagg gggcaggacc tgggccttca ggaacttcct
1380
ggcaggacgg tgcatgcggg cacattctgt caacacgctc agcaccggtg ccacacactc
1440
cttcagcctg tgggtctggt gcagacgctt ctctaggaag gcaaggaggg cattgatcac
1500
atccatatta actcccataa actctaagga tcc
1533
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```
<210> 4770
<211> 237
<212> PRT
<213> Homo sapiens
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<400> 4770
Met Gly Val Asn Met Asp Val Ile Asn Ala Leu Leu Ala Phe Leu Glu
1               5                   10                  15
Lys Arg Leu His Gln Thr His Arg Leu Lys Glu Cys Val Ala Pro Val
            20                  25                  30
Leu Ser Val Leu Thr Glu Cys Ala Arg Met His Arg Pro Ala Arg Lys
        35                  40                  45
Phe Leu Lys Ala Gln Val Leu Pro Pro Leu Arg Asp Val Arg Thr Arg
    50                  55                  60
Pro Glu Val Gly Asp Leu Leu Arg Asn Lys Leu Val Arg Leu Met Thr
65                  70                  75                  80
His Leu Asp Thr Asp Val Lys Arg Val Ala Ala Glu Phe Leu Phe Val
                85                  90                  95
Leu Cys Ser Glu Ser Val Pro Arg Phe Ile Lys Tyr Thr Gly Tyr Gly
            100                 105                 110
Asn Ala Ala Gly Leu Leu Ala Ala Arg Gly Leu Met Ala Gly Gly Arg
        115                 120                 125
Pro Glu Gly Gln Tyr Ser Glu Asp Glu Asp Thr Asp Thr Asp Glu Tyr
    130                 135                 140
Lys Glu Ala Lys Ala Ser Ile Asn Pro Val Thr Gly Arg Val Glu Glu
```

3949

```
145                    150                    155                    160
Lys Pro Pro Asn Pro Met Glu Gly Met Thr Glu Glu Gln Lys Glu His
                165                    170                    175
Glu Ala Met Lys Leu Val Thr Met Phe Asp Lys Leu Ser Ser Pro Thr
                180                    185                    190
Ala Pro Phe Pro Asn Arg Asn Arg Val Ile Gln Pro Met Gly Met Ser
        195                    200                    205
Pro Arg Gly His Leu Thr Ser Leu Gln Asp Ala Met Cys Glu Thr Met
        210                    215                    220
Glu Gln Gln Leu Ser Ser Asp Pro Asp Ser Asp Pro Asp
225                    230                    235
```

<210> 4771
<211> 2653
<212> DNA
<213> Homo sapiens

<400> 4771

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nttttttttt tttttttatgg cttctttgag tctttatttc cttggtgagg cagggcccca
60
gggtggggtg ggctgcctgg ctgaggctcc tgtagaccca ccaacctagg ggcacttttc
120
tgggcaccac aggtaaggca ctgcctgggg gctggaggag gctggaggag gatgcccaag
180
ctccccacac tcctcacccc agaccgggga agctggatat cctccgtgtt gtcctctccc
240
catagctggt ctgaggctgt ggtttacacg caggcacagg taggcgattc tgagcatcaa
300
cgcagatgga ggggaggggtg agccgtcgtg ggagaactgg cccaagacca gcacctggct
360
ggtgtcgcca gccccggctg cattggtggg tgaggcaggt ctggctggag tctgggtctg
420
caggcctggc cggggcaggt tgtggggggac caaggagccc tgggtgtgaa ccccactgtg
480
gaggcagcag gcacctagtg gtgccactgg gacacccggc tccaggactc cggatgtcac
540
acatgcgtga gtcttggcgt ctacaccccc ctcggggcca gtgggtgagc agtggcccgt
600
ggtccccgcc agagctcccc cagagtggac ttggctccgc cggacacagt gccctgctct
660
gagctgccgc tggctgctcc acgtctgaga ccacgcgacg ttgcctcatg aactgacgtg
720
gacagcagca ggggagacgc tgggtggttc tgtggccaag cacagcccgt gtcaggagca
780
caggccgtgc cctttcccag ggggcacact gggcatttct caatggcctt cacaggacgc
840
aaaggggcac acagaggcag tggggaagct ggagttcttg ggctggcagg gaatggtggc
900
agccttcttg gccttcatga agggcctggc ttgctgggct aaggtcacag tgttctgagg
960
tccccacacg cactcagact agaccctccg tacacaccca ggctagaccc tccatactca
1020
cccaggctag accctccata cacacccagg ctagaccctc catactcacc caggctagac
1080
```

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cctccataca cacccaggct agaccctcca tactcaccca ggctagaccc tccatactca
1140
cccaggctag atcctccata cacacccagg ctagactctc cgtactcacc caggctagat
1200
cctccgtact cacccaggct agaccctccg tactcaccca ggctagaccc tccgtacaca
1260
cccaggctag accctccgta cacacccaga ctagaggctt ggggctgaga aaagcagtca
1320
tgcctcctca ggaattacca gcagagaatg cccagccctc ttgatagtag caataattaa
1380
taggtttatc cccaaaggag cggaagctgt ggaatcctcc ccggcaatag gtcttagggt
1440
aggggctggg gcatcctaga gaagggccct aaatcaggcg ctcagtgtcc ggaacgcagg
1500
tctatcccac ccaccagccg gcccccaggc ctcccttcct cagtccttcc aggatatcgt
1560
cagggaggtt ctgggatccc caagtggtcc gaatccgggc tctaaggagt gtccgtggca
1620
tataaattag actctgctgt ggcaataaat aagaagctgg aaaaggaaaa agaaaagtta
1680
aagcaagaaa gactagagaa aataaaacag cgtgataaga ggctggagtg ggaaatgatg
1740
tgcagagtaa agccagatgt tgtccaagac aaagagacag agagaaatct tcagagaatt
1800
gcaacaaggg gtgtggtgca attatttaat gctgttcaga aacatcaaaa gaatgttgat
1860
gaaaaggtta aggaagctgg aagttctatg agaaagcgtg ctaagttgat atcaactgtt
1920
tccaagaaag atttcatcag tgttttgaga gggatggatg gaagtacaaa tgagactgct
1980
tcaagcagga agaaaccaaa agccaaacag actgaagtga atcagaaga aggcccaggt
2040
tggacgatcc tacgtgatga tttcatgatg ggagcatcta tgaaagactg ggacaaggaa
2100
agtgatgggc cagatgacag cagaccagaa tctgcaagtg actctgatac ataaagcatc
2160
ataggaaata caattgcagt cgttttattt tttctagaaa aatatgtcat cctctgatag
2220
ttggggaatt ataaggatac catttgtaag aaagccaaaa gacttttgcc agatttcata
2280
tttccccttt tcatgtacac tttatatata cttcattaaa attatatttt aaacccttgt
2340
ataattttaa gcattgttcc tcagaacatt tgtaaaagga tatatttctg cttgaccagc
2400
gagatgtgca ttttgccagg atcatattgg tcatgtctat tggtgtatta tttcagtatc
2460
accaatgttt tcagaaatac agtactaatt catcattaaa ctctttgaag ttaatatttt
2520
tctgccttct aacttataga ctcaactatg tatctgtagt ttttgggaat ggttggtgtt
2580
ttttgctttg tgttgggaag ttattgagaa aacctatata ataaaattta aaattatagt
2640
ttttcaaaaa aaa
2653
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<210> 4772
<211> 182
<212> PRT
<213> Homo sapiens

<400> 4772
Gly Val Ser Val Ala Tyr Lys Leu Asp Ser Ala Val Ala Ile Asn Lys
1   5   10   15
Lys Leu Glu Lys Glu Lys Glu Lys Leu Lys Gln Glu Arg Leu Glu Lys
            20   25   30
Ile Lys Gln Arg Asp Lys Arg Leu Glu Trp Glu Met Met Cys Arg Val
            35   40   45
Lys Pro Asp Val Val Gln Asp Lys Glu Thr Glu Arg Asn Leu Gln Arg
    50   55   60
Ile Ala Thr Arg Gly Val Val Gln Leu Phe Asn Ala Val Gln Lys His
65   70   75   80
Gln Lys Asn Val Asp Glu Lys Val Lys Glu Ala Gly Ser Ser Met Arg
            85   90   95
Lys Arg Ala Lys Leu Ile Ser Thr Val Ser Lys Lys Asp Phe Ile Ser
            100   105   110
Val Leu Arg Gly Met Asp Gly Ser Thr Asn Glu Thr Ala Ser Ser Arg
            115   120   125
Lys Lys Pro Lys Ala Lys Gln Thr Glu Val Lys Ser Glu Glu Gly Pro
    130   135   140
Gly Trp Thr Ile Leu Arg Asp Asp Phe Met Met Gly Ala Ser Met Lys
145   150   155   160
Asp Trp Asp Lys Glu Ser Asp Gly Pro Asp Asp Ser Arg Pro Glu Ser
            165   170   175
Ala Ser Asp Ser Asp Thr
            180

<210> 4773
<211> 319
<212> DNA
<213> Homo sapiens

<400> 4773
gctagcagga ggggaggtaa attaagtaaa tggagatggc ctgggatgca ggccagctgg
60
gaggagtctc cagtgggagg ggcagctcag agagcaacag agggagataa gattcctaaa
120
tgctgcaggc cccagcccag gcccaaccca agcagtctct tcccacccag cccccaggcc
180
cgggcggcaa tggggtggcg agtacttgcc tgacccagc atcccatctc ctcagctctc
240
agcctggacc cagcatccca tctcctcagc tctcagggag gtggaagctg ggaaccccac
300
ccccaacccc ttcacgcgt
319

<210> 4774
<211> 91
<212> PRT

<213> Homo sapiens

<400> 4774
Met Gln Ala Ser Trp Glu Glu Ser Pro Val Gly Gly Ala Ala Gln Arg
1   5   10   15
Ala Thr Glu Gly Asp Lys Ile Pro Lys Cys Cys Arg Pro Gln Pro Arg
            20   25   30
Pro Asn Pro Ser Ser Leu Phe Pro Pro Ser Pro Gln Ala Arg Ala Ala
        35   40   45
Met Gly Trp Arg Val Leu Ala Trp Thr Gln His Pro Ile Ser Ser Ala
    50   55   60
Leu Ser Leu Asp Pro Ala Ser His Leu Leu Ser Ser Gln Gly Gly Gly
65   70   75   80
Ser Trp Glu Pro His Pro Gln Pro Leu His Ala
                85   90

<210> 4775
<211> 433
<212> DNA
<213> Homo sapiens

<400> 4775
ggatcccaca ggagatacct gacaaggact aagaggaggc ttcccagagg gcataacacc
60
tatgctggat cttttggagg aaaaaataat tgtcaggaga aaaggagtga aaaagacctt
120
tgggcttaaa catgaaccaa catggcggat gcttcaagca agtggggttg ctgggcccta
180
aagtggaga ggggtgaaat gaaaagactc gcctcttctt cccccactaa ctccctcctc
240
tggctgcact gccctccttg ctatttcttt gaacgtgcca accataccgc gacctcactg
300
cccttgcact tgctctctct gcttctccta actatacatg cggctcatcc tgtaacttcc
360
tttcagtttt tgctcacctt cttgaaaagg ccttctctga ccattctgtt taatattcca
420
ccccgcttaa acg
433

<210> 4776
<211> 97
<212> PRT
<213> Homo sapiens

<400> 4776
Met Ala Asp Ala Ser Ser Lys Trp Gly Cys Trp Ala Leu Lys Val Glu
1   5   10   15
Arg Gly Glu Met Lys Arg Leu Ala Ser Ser Ser Pro Thr Asn Ser Leu
            20   25   30
Leu Trp Leu His Cys Pro Pro Cys Tyr Phe Phe Glu Arg Ala Asn His
        35   40   45
Thr Ala Thr Ser Leu Pro Leu His Leu Leu Ser Leu Leu Leu Leu Thr
    50   55   60
Ile His Ala Ala His Pro Val Thr Ser Phe Gln Phe Leu Leu Thr Phe

```
65                    70                    75                    80
Leu Lys Arg Pro Ser Leu Thr Ile Leu Phe Asn Ile Pro Pro Arg Leu
                     85                    90                    95
Asn
```

<210> 4777
<211> 2200
<212> DNA
<213> Homo sapiens

<400> 4777
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gcggccgctg cccgccttaa tcgactgaag aagaaggagt acgtgatggg gctggagagt
60
cgagtccggg gtctggcagc cgagaaccag gagctgcggg ccgagaatcg ggagctgggc
120
aaacgcgtac aggcactgca ggaggagagt cgctacctac gggcagtctt agccaacgag
180
actggactgg ctcgcttgct gagccggctg agcggcgtgg gactgcggct gaccacctcg
240
ctcttcagag actcgcccgc cggtgaccac gactacgctc tgccggtggg aaagcagaag
300
caggacctgc tggaagagga cgactcggcg ggaggagtct gtctccatgt ggacaaggat
360
aaggtgtcgg tggagttctg ctcggcgtgc gcccggaagg cgtcgtcttc tcttaaaatt
420
ttcttttta ggtgatttcc ttcctgccag gctccgttgt aggggttaca gaacagtcgt
480
tcccgcctca caacctgtgg atacagctgt tggggcagaa gagacgggac cagctgctgg
540
ccacatttcc tgctttattt taaaaggtag tataagaaat gaggaaaaag aggtaatatc
600
agggcttctg ctgttttta ttttaacat gttcataatt aaaaagtatt ttccagcagt
660
ccaaagatgt aagttatctt acacataaaa tgttttattt tgttatttgg ttatgaaaat
720
ggaatccttg ttcttgcaca actgtaaatg ttttgttgct agataatacg atttgagacc
780
tgaattggtc tttggtttcc agtgcatcac agcatatttt gtaaaatcat ctactactgc
840
acttgagcat gaatgggtag tagccaaact cacaaattgg agtgatgaac ctgcttatac
900
ctaagggcag gagcaagccc ctcacaatgc agctgcatgg gtttttagtg cctactgaat
960
tatatatata tatacatata tatatatata tataaaccaa ɛagtagttgg aaagattatt
1020
tgaaatgact aatttgtgct atctttatga aatatgttaa atgtagcttt tttgaaacag
1080
aagccttgaa ttgaaattta actaatactt gaacattttg tatatatttc tttgtatata
1140
attttgtgca gtaccaatga caaaaatatg gtgtcataat aaaaccaggt ttgttgatct
1200
tttagttatg ggctcaaaga atttattcat ctctaacatg atattggaaa ataatggatg
1260
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3954

```
aaaataggaa aaatgattgt taatgctgac tgtgggtctt aaaaggttct ggaaagcagt
1320
aagttcattt ttctaaaaac tataacattc tgttggagta ttttcttcct tacgtcaata
1380
ctttcctgc attatttgaa attgtgggct ggggagaaac agtagtcaaa gctttctgaa
1440
ttgagatact ttgaaattcc aagtgtagat ttttagaatg tcattttata aatggcagtt
1500
tttggaatta cttgataaga acttttgaaa atggaaggat tagtatggcc tattttttaaa
1560
gctgctttgt taggttcctt atgtttttatt aactgtcttt tctcagtttc catttcattt
1620
ttttttttcta gttttggtga cttagtgatt ttgtcatttt ttacatcaac ttcatggtct
1680
tgttttttaca tggtaattgc atgtacttag gatctatcta ataggggctt taaataaatt
1740
tggtcatatt tatgtgtaag cacattttac tgtaaatgtt tgggtttctg aatttaaaca
1800
gatctgttta tttcagtatg tagtaaacaa tatcttaaag tgtccgattc actacttgtt
1860
aattaaaaaa gttatgatta atgtgaaact gttgtcttac tatttttaga aaattgtgtt
1920
ctggatgatt agcacatgga taaaggagat ttctggaata taaaatggat tgtttttgaa
1980
atttctaggt ttggctctat ttactgtaat ggttgaaaac aatttagtat ttgggtgacc
2040
cttttgtttt tcttctaaat gtgcctctgg taaaatacag aactagacta aagatgtagc
2100
ttttttaatat ttgtcttttg atggtggcag gagttcatac attaattgaa ctaacacatc
2160
atattttgac ctactatttc tatcatattg acttactgtt
2200
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```
<210> 4778
<211> 144
<212> PRT
<213> Homo sapiens
```

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<400> 4778
Ala Ala Ala Ala Arg Leu Asn Arg Leu Lys Lys Lys Glu Tyr Val Met
1               5                   10                  15
Gly Leu Glu Ser Arg Val Arg Gly Leu Ala Ala Glu Asn Gln Glu Leu
            20                  25                  30
Arg Ala Glu Asn Arg Glu Leu Gly Lys Arg Val Gln Ala Leu Gln Glu
        35                  40                  45
Glu Ser Arg Tyr Leu Arg Ala Val Leu Ala Asn Glu Thr Gly Leu Ala
    50                  55                  60
Arg Leu Leu Ser Arg Leu Ser Gly Val Gly Leu Arg Leu Thr Thr Ser
65                  70                  75                  80
Leu Phe Arg Asp Ser Pro Ala Gly Asp His Asp Tyr Ala Leu Pro Val
                85                  90                  95
Gly Lys Gln Lys Gln Asp Leu Leu Glu Glu Asp Asp Ser Ala Gly Gly
            100                 105                 110
Val Cys Leu His Val Asp Lys Asp Lys Val Ser Val Glu Phe Cys Ser
```

```
          115                  120                  125
Ala Cys Ala Arg Lys Ala Ser Ser Ser Leu Lys Ile Phe Phe Phe Arg
          130                  135                  140
```

<210> 4779
<211> 4467
<212> DNA
<213> Homo sapiens

<400> 4779
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gcggaccggc cgggtggagg ccacacgcta ccccgaggct gcgtaggccg cgcgaagggg
60
gacgccgtgc cgtgggcctg gggtcggggg agcagcagac cgggaagcac cgtgaggacc
120
gaggatttgg ggtggaaggc aggcatggtc aaacccattt cactgacagg agagcagaga
180
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<211> 1241
<212> PRT
<213> Homo sapiens

<400> 4780
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            20   25   30
Ser Asp Pro Ser Asp Gly Gln Arg Arg Arg Gln Gln Gln Gln Gln Gln
        35   40   45
Gln Gln Gln Gln Gln Gln Gln Gln Gln Pro Gln Gln Pro Gln Val Leu
    50   55   60
Ser Ser Glu Gly Gly Gln Leu Arg His Asn Pro Leu Asp Ile Gln Met
65   70   75   80
Leu Ser Arg Gly Leu His Glu Gln Ile Phe Gly Gln Gly Gly Glu Met
                85   90   95
Pro Gly Glu Ala Ala Val Arg Arg Ser Val Glu His Leu Gln Lys His
            100   105   110
Gly Leu Trp Gly Gln Pro Ala Val Pro Leu Pro Asp Val Glu Leu Arg
            115   120   125
Leu Pro Pro Leu Tyr Gly Asp Asn Leu Asp Gln His Phe Arg Leu Leu
        130   135   140
Ala Gln Lys Gln Ser Leu Pro Tyr Leu Glu Ala Ala Asn Leu Leu Leu
145   150   155   160
Gln Ala Gln Leu Pro Pro Lys Pro Pro Ala Trp Ala Trp Ala Glu Gly
                165   170   175
Trp Thr Arg Tyr Gly Pro Glu Gly Glu Ala Val Pro Val Ala Ile Pro
            180   185   190
Glu Glu Arg Ala Leu Val Phe Asp Val Glu Val Cys Leu Ala Glu Gly
            195   200   205
Thr Cys Pro Thr Leu Ala Val Ala Ile Ser Pro Ser Ala Trp Tyr Ser
            210   215   220
Trp Cys Ser Gln Arg Leu Val Glu Glu Arg Tyr Ser Trp Thr Ser Gln
225   230   235   240
Leu Ser Pro Ala Asp Leu Ile Pro Leu Glu Val Pro Thr Gly Ala Ser
                245   250   255
Ser Pro Thr Gln Arg Asp Trp Gln Glu Gln Leu Val Val Gly His Asn
            260   265   270
Val Ser Phe Asp Arg Ala His Ile Arg Glu Gln Tyr Leu Ile Gln Gly
            275   280   285
Ser Arg Met Arg Phe Leu Asp Thr Met Ser Met His Met Ala Ile Ser
        290   295   300
Gly Leu Ser Ser Phe Gln Arg Ser Leu Trp Ile Ala Ala Lys Gln Gly
305   310   315   320
Lys His Lys Val Gln Pro Pro Thr Lys Gln Gly Gln Lys Ser Gln Arg
                325   330   335
Lys Ala Arg Arg Gly Pro Ala Ile Ser Ser Trp Asp Trp Leu Asp Ile
            340   345   350
Ser Ser Val Asn Ser Leu Ala Glu Val His Arg Leu Tyr Val Gly Gly
            355   360   365
Pro Pro Leu Glu Lys Glu Pro Arg Glu Leu Phe Val Lys Gly Thr Met
        370   375   380
Lys Asp Ile Arg Glu Asn Phe Gln Asp Leu Met Gln Tyr Cys Ala Gln

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Asp Val Trp Ala Thr His Glu Val Phe Gln Gln Gln Leu Pro Leu Phe
                405                     410                     415
Leu Glu Arg Cys Pro His Pro Val Thr Leu Ala Gly Met Leu Glu Met
                420                     425                     430
Gly Val Ser Tyr Leu Pro Val Asn Gln Asn Trp Glu Arg Tyr Leu Ala
                435                     440                     445
Glu Ala Gln Gly Thr Tyr Glu Glu Leu Gln Arg Glu Met Lys Lys Ser
        450                     455                     460
Leu Met Asp Leu Ala Asn Asp Ala Cys Gln Leu Leu Ser Gly Glu Arg
465                     470                     475                     480
Tyr Lys Glu Asp Pro Trp Leu Trp Asp Leu Glu Trp Asp Leu Gln Glu
                485                     490                     495
Phe Lys Gln Lys Lys Ala Lys Lys Val Lys Lys Glu Pro Ala Thr Ala
                500                     505                     510
Ser Lys Leu Pro Ile Glu Gly Ala Gly Ala Pro Gly Asp Pro Met Asp
        515                     520                     525
Gln Glu Asp Leu Gly Pro Cys Ser Glu Glu Glu Phe Gln Gln Asp
        530                     535                     540
Val Met Ala Arg Ala Cys Leu Gln Lys Leu Lys Gly Thr Thr Glu Leu
545                     550                     555                     560
Leu Pro Lys Arg Pro Gln His Leu Pro Gly His Pro Gly Trp Tyr Arg
                565                     570                     575
Lys Leu Cys Pro Arg Leu Asp Asp Pro Ala Trp Thr Pro Gly Pro Ser
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Leu Leu Ser Leu Gln Met Arg Val Thr Pro Lys Leu Met Ala Leu Thr
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Trp Asp Gly Phe Pro Leu His Tyr Ser Glu Arg His Gly Trp Gly Tyr
        610                     615                     620
Lːu Val Pro Gly Arg Arg Asp Asn Leu Ala Lys Leu Pro Thr Gly Thr
625                     630                     635                     640
Thr Leu Glu Ser Ala Gly Val Val Cys Pro Tyr Arg Ala Ile Glu Ser
                645                     650                     655
Leu Tyr Arg Lys His Cys Leu Glu Gln Gly Lys Gln Gln Leu Met Pro
                660                     665                     670
Gln Glu Ala Gly Leu Ala Glu Glu Phe Leu Leu Thr Asp Asn Ser Ala
        675                     680                     685
Ile Trp Gln Thr Val Glu Glu Leu Asp Tyr Leu Glu Val Glu Ala Glu
        690                     695                     700
Ala Lys Met Glu Asn Leu Arg Ala Ala Val Pro Gly Gln Pro Leu Ala
705                     710                     715                     720
Leu Thr Ala Arg Gly Gly Pro Lys Asp Thr Gln Pro Ser Tyr His His
                725                     730                     735
Gly Asn Gly Pro Tyr Asn Asp Val Asp Ile Pro Gly Cys Trp Phe Phe
                740                     ⁻45                     750
Lys Leu Pro His Lys Asp Gly Asn Ser Cys Asn Val Gly Ser Pro Phe
                755                     760                     765
Ala Lys Asp Phe Leu Pro Lys Met Glu Asp Gly Thr Leu Gln Ala Gly
        770                     775                     780
Pro Gly Gly Ala Ser Gly Pro Arg Ala Leu Glu Ile Asn Lys Met Ile
785                     790                     795                     800
Ser Phe Trp Arg Asn Ala His Lys Arg Ile Ser Ser Gln Met Val Val
                805                     810                     815
Trp Leu Pro Arg Ser Ala Leu Pro Arg Ala Val Ile Arg His Pro Asp
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    Ala Gly Thr Ile Thr Arg Arg Ala Val Glu Pro Thr Trp Leu Thr Ala
            850                    855                    860
    Ser Asn Ala Arg Pro Asp Arg Val Gly Ser Glu Leu Lys Ala Met Val
    865                    870                    875                    880
    Gln Ala Pro Pro Gly Tyr Thr Leu Val Gly Ala Asp Val Asp Ser Gln
                        885                    890                    895
    Glu Leu Trp Ile Ala Ala Val Leu Gly Asp Ala His Phe Ala Gly Met
                900                    905                    910
    His Gly Cys Thr Ala Phe Gly Trp Met Thr Leu Gln Gly Arg Lys Ser
            915                    920                    925
    Arg Gly Thr Asp Leu His Ser Lys Thr Ala Thr Thr Val Gly Ile Ser
            930                    935                    940
    Arg Glu His Ala Lys Ile Phe Asn Tyr Gly Arg Ile Tyr Gly Ala Gly
    945                    950                    955                    960
    Gln Pro Phe Ala Glu Arg Leu Leu Met Gln Phe Asn His Arg Leu Thr
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    Gln Gln Glu Ala Ala Glu Lys Ala Gln Gln Met Tyr Ala Ala Thr Lys
                980                    985                    990
    Gly Leu Arg Trp Tyr Arg Leu Ser Asp Glu Gly Glu Trp Leu Val Arg
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    Glu Leu Asn Leu Pro Val Asp Arg Thr Glu Gly Gly Trp Ile Ser Leu
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    Gln Asp Leu Arg Lys Val Gln Arg Glu Thr Ala Arg Lys Ser Gln Trp
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    Lys Lys Trp Glu Val Val Ala Glu Arg Ala Trp Lys Gly Gly Thr Glu
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    Arg Thr Pro Val Leu Gly Cys Cys Ile Ser Arg Ala Leu Glu Pro Ser
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    Ala Val Gln Glu Glu Phe Met Thr Ser Arg Val Asn Trp Val Val Gln
                1090                   1095                   1100
    Ser Ser Ala Val Asp Tyr Leu His Leu Met Leu Val Ala Met Lys Trp
    1105                   1110                   1115                   1120
    Leu Phe Glu Glu Phe Ala Ile Asp Gly Arg Phe Cys Ile Ser Ile His
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    Asp Glu Val Arg Tyr Leu Val Arg Glu Glu Asp Arg Tyr Arg Ala Ala
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    Leu Ala Leu Gln Ile Thr Asn Leu Leu Thr Arg Cys Met Phe Ala Tyr
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    Lys Leu Gly Leu Asn Asp Leu Pro Gln Ser Val Ala Phe Phe Ser Ala
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    Val Asp Ile Tyr Arg Cys Leu Arg Lys Glu Val Thr Met Asp Cys Lys
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    Thr Pro Ser Asn Pro Thr Gly Met Glu Arg Arg Tyr Gly Ile Pro Gln
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    Leu Glu Lys Arg Ser Gln Pro Gly Pro
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<210> 4781
<211> 344
<212> DNA
<213> Homo sapiens

<400> 4781
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<211> 109
<212> PRT
<213> Homo sapiens

<400> 4782
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            20   25   30
Gln Gly Asn Gly Gly Gln Thr Arg Lys Leu Thr Ala Ser Arg Thr Val
        35   40   45
Ser Glu Lys His Gln Gly Lys Ala Ala Thr Thr Ala Lys Thr Leu Ile
    50   55   60
Pro Lys Ser Gln His Arg Met Leu Ala Pro Thr Gly Ala Val Ser Thr
65   70   75   80
Arg Thr Arg Gln Lys Gly Val Thr Thr Ala Val Ile Pro Pro Lys Glu
                85   90   95
Lys Lys Pro Gln Ala Thr Pro Pro Pro Ala Pro Phe Gln
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<210> 4783
<211> 1143
<212> DNA
<213> Homo sapiens

<400> 4783
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180
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240

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1143

<210> 4784
<211> 212
<212> PRT
<213> Homo sapiens

<400> 4784
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            20   25   30
Ala Leu Asn Leu Ser Leu Cys Lys Gln Ile Thr Asp Ser Ser Leu Gly
        35   40   45
Arg Ile Ala Gln Tyr Leu Lys Gly Leu Glu Val Leu Glu Leu Gly Gly
    50   55   60
Cys Ser Asn Ile Thr Asn Thr Gly Leu Leu Leu Ile Ala Trp Gly Leu
65   70   75   80
Gln Arg Leu Lys Ser Leu Asn Leu Arg Ser Cys Arg His Leu Ser Asp
                85   90   95
Val Gly Ile Gly His Leu Ala Gly Met Thr Arg Ser Ala Ala Glu Gly
            100   105   110
Cys Leu Gly Leu Glu Gln Leu Thr Leu Gln Asp Cys Gln Lys Leu Thr

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        115                   120                   125
Asp Leu Ser Leu Lys His Ile Ser Arg Gly Leu Thr Gly Leu Arg Leu
    130                   135                   140
Leu Asn Leu Ser Phe Cys Gly Gly Ile Ser Asp Ala Gly Leu Leu His
145                   150                   155                   160
Leu Ser His Met Gly Ser Leu Arg Ser Leu Asn Leu Arg Ser Cys Asp
                165                   170                   175
Asn Ile Ser Asp Thr Gly Ile Met His Leu Ala Met Gly Ser Leu Arg
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Leu Ser Gly Leu Asp Val Ser Phe Cys Asp Lys Val Gly Asp Gln Ser
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Leu Ala Tyr Ile
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<210> 4785
<211> 3289
<212> DNA
<213> Homo sapiens

<400> 4785

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1260

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1740

gcagcagctg gcaccttatt ggccagcaac atgtccctga tctcagtgag gtcctccttg
1800

gtgaacacaa agcccacatt cccccggata tgaggcagca gtttctccag agctgggttg
1860

ttttccaggt gccctcggat ggccttgcgc atcatggtgt tcttgcccat cagcacacag
1920

ccttcccgcg aagggacatg cggatctgct gcatctgctt ggagcccaca ttgtctgctc
1980

cctcaatgaa acatttcgga taatcatcca atagttggat gatcttaagg aagtagttgc
2040

tctcgccagg cgtcctcgtg gaagtgacat cgtctttaaa ccctgcgtgg caatccctga
2100

cgcaccgccg tgatgcccag ggaagacagg gcgacctgga agtccaacta cttccttaag
2160

atcatcgtaa gtgcacaact attggatgat tatccgaaat gtttcattgt gggagcagac
2220

aatgtgggct ccaagcagat gcagcagatc cgcatgtccc ttcgcgggaa ggctgtggtg
2280

ctgatgggca agaacaccat gatgcgcaag gccatccgag ggcacctgga aaacaaccca
2340

gctctggaga aactgctgcc tcatatccgg gggaatgtgg gctttgtgtt caccaaggag
2400

gacctcactg agatcaggga catgttgctg gccaataagg tgccagctgc tgcccgtgct
2460

ggtgccattg ccccatgtga agtcactgtg ccagcccaga acactggtct cgggcccgag
2520

aagacctcct ttttccaggc tttaggtatc accactaaaa tctccagggg caccattgaa
2580

atcctgagtg atgtgcagct gatcaagact ggagacaaag tgggagccag cgaagccacg
2640

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2760
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2820
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2880
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3120
aacagacact ggcaacattg cggacaccct ccaggaagcg agaatgcaga gtttcctctg
3180
tgatatcaag cacttcaggg ttgtagatgc tgccattgtc gaacacctgc tggatgacca
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3289
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<210> 4786
<211> 322
<212> PRT
<213> Homo sapiens

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1               5                   10                  15
Ile Ile Val Ser Ala Gln Leu Leu Asp Asp Tyr Pro Lys Cys Phe Ile
            20                  25                  30
Val Gly Ala Asp Asn Val Gly Ser Lys Gln Met Gln Gln Ile Arg Met
            35                  40                  45
Ser Leu Arg Gly Lys Ala Val Val Leu Met Gly Lys Asn Thr Met Met
        50                  55                  60
Arg Lys Ala Ile Arg Gly His Leu Glu Asn Asn Pro Ala Leu Glu Lys
65                  70                  75                  80
Leu Leu Pro His Ile Arg Gly Asn Val Gly Phe Val Phe Thr Lys Glu
                85                  90                  95
Asp Leu Thr Glu Ile Arg Asp Met Leu Leu Ala Asn Lys Val Pro Ala
            100                 105                 110
Ala Ala Arg Ala Gly Ala Ile Ala Pro Cys Glu Val Thr Val Pro Ala
            115                 120                 125
Gln Asn Thr Gly Leu Gly Pro Glu Lys Thr Ser Phe Phe Gln Ala Leu
        130                 135                 140
Gly Ile Thr Thr Lys Ile Ser Arg Gly Thr Ile Glu Ile Leu Ser Asp
145                 150                 155                 160
Val Gln Leu Ile Lys Thr Gly Asp Lys Val Gly Ala Ser Glu Ala Thr
                165                 170                 175
Leu Leu Asn Met Leu Asn Ile Ser Pro Phe Ser Phe Gly Leu Val Ile
                180                 185                 190
Gln Gln Val Phe Asp Asn Gly Ser Ile Tyr Asn Pro Glu Val Leu Asp
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3966

```
          195                    200                    205
Ile Thr Glu Glu Thr Leu His Ser Arg Phe Leu Glu Gly Val Arg Asn
     210                    215                    220
Val Ala Ser Val Cys Leu Gln Ile Gly Tyr Pro Thr Val Ala Ser Val
225                    230                    235                    240
Pro His Ser Ile Ile Asn Gly Tyr Lys Arg Val Leu Ala Leu Ser Val
                    245                    250                    255
Glu Thr Asp Tyr Thr Phe Pro Leu Ala Glu Lys Val Lys Ala Phe Leu
                    260                    265                    270
Ala Asp Pro Ser Ala Phe Val Ala Ala Ala Pro Val Ala Ala Ala Thr
                    275                    280                    285
Thr Ala Ala Pro Ala Ala Ala Ala Ala Ala Ala Pro Ala Lys Val Glu
          290                    295                    300
Ala Lys Glu Glu Ser Glu Glu Ser Asp Glu Asp Met Gly Phe Gly Leu
305                    310                    315                    320
Phe Asp
```

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<210> 4787
<211> 1258
<212> DNA
<213> Homo sapiens

<400> 4787
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120
tggagtcgcc cggacctgag aggctgctgc actgggcctc agccagccct ccggatgctg
180
gtgctgccat ccccctgccc tcagcctctg gcattttcct ccgttgagac catggagggc
240
cctccccgtc ggacttgccg ctccccagaa cctggacctt cctcctccat cggatctccc
300
caggcttcat ctcctccaag gcccaaccac tacctgctta ttgacactca gggtgtcccc
360
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420
cagaaaaagt gctacagctg ccccgtgtgc tcaagggtct tcgagtacat gtcctacctt
480
cagcgacaca gcatcaccca ctcggaggta aagcccttcg agtgtgacat ctgtgggaag
540
gcattcaagc gcgccagcca cttggcacgg caccattcca ttcacctggc gggtggtggg
600
cggccccacg gctgcccgct ctgccctcgc cgcttccggg atgcgggtga gctggcccag
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cacagccggg tgcactctgg ggaacgcccg tttcagtgtc cacactgccc tcgccgcttt
720
atggagcaga acacactgca gaaacacacg cggtggaagc atccatgagc cgggctgccg
780
ggtgccccag gtaccacagg actttgcagg gagcctggac tcctgtccag acacctggtg
840
agagcctgag gctggtgttc agggccctgg acacagacac agagcagccg catctcaaag
900
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gcagagccct gcctgaagga ggaatccgtg agtaatcttc aggtcctccg tgttctggag
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1020
tccatggcag agccttgact ggatggaggt ggggagtgtg gtgtgtaaag tctctggcct
1080
cataaaaggt ggctgtgggt cgtcaggaat ctgcgccatc ttcctggggc ttctgcgctg
1140
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1258

<210> 4788
<211> 197
<212> PRT
<213> Homo sapiens

<400> 4788
Met Leu Val Leu Pro Ser Pro Cys Pro Gln Pro Leu Ala Phe Ser Ser
1   5   10   15
Val Glu Thr Met Glu Gly Pro Pro Arg Arg Thr Cys Arg Ser Pro Glu
            20   25   30
Pro Gly Pro Ser Ser Ser Ile Gly Ser Pro Gln Ala Ser Ser Pro Pro
            35   40   45
Arg Pro Asn His Tyr Leu Leu Ile Asp Thr Gln Gly Val Pro Tyr Thr
        50   55   60
Val Leu Val Asp Glu Glu Ser Gln Arg Glu Pro Gly Ala Ser Gly Ala
65   70   75   80
Pro Gly Gln Lys Lys Cys Tyr Ser Cys Pro Val Cys Ser Arg Val Phe
                85   90   95
Glu Tyr Met Ser Tyr Leu Gln Arg His Ser Ile Thr His Ser Glu Val
            100   105   110
Lys Pro Phe Glu Cys Asp Ile Cys Gly Lys Ala Phe Lys Arg Ala Ser
            115   120   125
His Leu Ala Arg His His Ser Ile His Leu Ala Gly Gly Gly Arg Pro
        130   135   140
His Gly Cys Pro Leu Cys Pro Arg Arg Phe Arg Asp Ala Gly Glu Leu
145   150   155   160
Ala Gln His Ser Arg Val His Ser Gly Glu Arg Pro Phe Gln Cys Pro
                165   170   175
His Cys Pro Arg Arg Phe Met Glu Gln Asn Thr Leu Gln Lys His Thr
            180   185   190
Arg Trp Lys His Pro
            195

<210> 4789
<211> 1515
<212> DNA
<213> Homo sapiens

<400> 4789
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60

3968

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120
tggtccacag gccatagata gccaatccct gtcccagagg gtggagctgt gagacttgtc
180
ggggtgagac ctgttagagg ctggatgggg caattgcttg gggaatgtgt gcagatgttc
240
tctgcctcct gctccttcta gatgattttt ggcgacctga tgcgattctg ctggctgatg
300
gctgtggtca tcctgggctt tgcttcagcc ttctatatca tcttccagac agaggacccc
360
gaggagctag gccacttcta cgactacccc atggccctgt tcagcacctt cgagctgttc
420
cttaccatca tcgatggccc agccaactac aacgtggacc tgcccttcat gtacagcatc
480
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720
gatctcaacc ggcagcggat ccaacgctac gcacaggcct tccacacccg gggctctgag
780
gatttggaca aagactcagt ggaaaaacta gagctgggct gtcccttcag cccccacctg
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1020
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1140
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1320
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1380
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<210> 4790
<211> 241
<212> PRT

3969

<213> Homo sapiens

<400> 4790
Met Ile Phe Gly Asp Leu Met Arg Phe Cys Trp Leu Met Ala Val Val
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Ile Leu Gly Phe Ala Ser Ala Phe Tyr Ile Ile Phe Gln Thr Glu Asp
            20   25   30
Pro Glu Glu Leu Gly His Phe Tyr Asp Tyr Pro Met Ala Leu Phe Ser
        35   40   45
Thr Phe Glu Leu Phe Leu Thr Ile Ile Asp Gly Pro Ala Asn Tyr Asn
    50   55   60
Val Asp Leu Pro Phe Met Tyr Ser Ile Thr Tyr Ala Ala Phe Ala Ile
65   70   75   80
Ile Ala Thr Leu Leu Met Leu Asn Leu Leu Ile Ala Met Met Gly Asp
            85   90   95
Thr His Trp Arg Val Ala His Glu Arg Asp Glu Leu Trp Arg Ala Gln
            100   105   110
Ile Val Ala Thr Thr Val Met Leu Glu Arg Lys Leu Pro Arg Cys Leu
            115   120   125
Trp Pro Arg Ser Gly Ile Cys Gly Arg Glu Tyr Gly Leu Gly Asp Arg
    130   135   140
Trp Phe Leu Arg Val Glu Asp Arg Gln Asp Leu Asn Arg Gln Arg Ile
145   150   155   160
Gln Arg Tyr Ala Gln Ala Phe His Thr Arg Gly Ser Glu Asp Leu Asp
                165   170   175
Lys Asp Ser Val Glu Lys Leu Glu Leu Gly Cys Pro Phe Ser Pro His
            180   185   190
Leu Ser Leu Pro Met Pro Ser Val Ser Arg Ser Thr Ser Arg Ser Ser
        195   200   205
Ala Asn Trp Glu Arg Leu Arg Gln Gly Thr Leu Arg Arg Asp Leu Arg
    210   215   220
Gly Ile Ile Asn Arg Gly Leu Glu Asp Gly Glu Ser Trp Glu Tyr Gln
225   230   235   240
Ile

<210> 4791
<211> 4481
<212> DNA
<213> Homo sapiens

<400> 4791
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120
aacaaacaat ggggaaaagg caccctattc aataaatggt gctgggataa ttcgctagcc
180
atatgcagaa tagtgaaact ggacccctat ccttcacgat atacaaaaat caactcaaga
240
tggattaaag acttaaatat aaaacctaaa agtattaaat tcctagaaga caacccagga
300
aatgccattc tggacataag tgctggaaaa gacttaatga tgaacaccnc caaagcaatt
360

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acaacaaaaa caaaaattga caagtgggac ctaattaaac taaataactt ctgcacagca
420
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540
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600
aacagacact tctcaaaaga agacatacaa gcaatcaaca aanncgtgaa aaaatgctca
660
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720
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840
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900
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atgtgacatt ttatcttttc ttggtgtcat ctttatgttg cccacaatcc cttgaacatg
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1320
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1980
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3971

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2280
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2400
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2460
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2640
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3120
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3240
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3360
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3420
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3480
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3540
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3600
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tcagttggat gcgggcagct gcctcgtggt tctcgccaat ctcccggcac atgctgaagc
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4080
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4200
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4260
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4320
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4380
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4440
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4481
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<210> 4792
<211> 179
<212> PRT
<213> Homo sapiens
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<400> 4792
Tyr Cys Tyr Lys Ser Arg His Leu Ser Gln Trp Asn Arg Ile Glu His
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Ser Lys Ile Lys Leu His Thr Tyr His His Leu Ile Val Asp Lys Ala
            20                  25                  30
Asn Lys Asn Lys Gln Trp Gly Lys Gly Thr Leu Phe Asn Lys Trp Cys
        35                  40                  45
Trp Asp Asn Ser Leu Ala Ile Cys Arg Ile Val Lys Leu Asp Pro Tyr
    50                  55                  60
Pro Ser Arg Tyr Thr Lys Ile Asn Ser Arg Trp Ile Lys Asp Leu Asn
65                  70                  75                  80
Ile Lys Pro Lys Ser Ile Lys Phe Leu Glu Asp Asn Pro Gly Asn Ala
                85                  90                  95
Ile Leu Asp Ile Ser Ala Gly Lys Asp Leu Met Met Asn Thr Xaa Lys
            100                 105                 110
Ala Ile Thr Thr Lys Thr Lys Ile Asp Lys Trp Asp Leu Ile Lys Leu
            115                 120                 125
Asn Asn Phe Cys Thr Ala Lys Glu Thr Ile Asn Arg Val Asp Arg Gln
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```
            130                  135                 140
Pro Thr Glu Trp Glu Lys Val Leu Ala Trp Glu Lys Ile Phe Ser Asn
145                  150                 155                 160
Tyr Ala Ser Asp Lys Gly Leu Ile Ser Ser Ile Tyr Lys Glu Leu Lys
                 165                 170                 175
Gln Ile Tyr
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<210> 4793
<211> 1242
<212> DNA
<213> Homo sapiens

<400> 4793

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240
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780
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840
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1020
ctcggtggcg gggaggcagc cgggagcctt ctcagaggag aagggtcccg tgatcattcc
1080
acagatgctt ttagagctct gggctcaggg taaccgacca attatggtgc tgccagaggg
1140
cctgcatttaa ctatacacac gtcacaaaat caggcttccc cgggaggagc catcggactc
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1242
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<210> 4794
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4794

Met	Glu	Ala	Cys	Ala	Pro	Asp	Cys	Ala	Gln	His	Asn	Ser	Trp	Ala	Ala
1				5					10					15	

Arg	Val	Gly	Gln	Gly	Arg	Ala	Asn	Asp	Thr	Phe	Pro	Leu	Ala	Lys	Glu
			20				25					30			

Asp	Thr	Pro	Glu	Ala	Lys	Cys	Ser	Met	Gln	Gln	Pro	Gly	Ile	Gln	Ala
		35				40					45				

Thr	Ser	Ser	Val	Ala	Gly	Arg	Gln	Pro	Gly	Ala	Phe	Ser	Glu	Glu	Lys
	50				55					60					

Gly	Pro	Val	Ile	Ile	Pro	Gln	Met	Leu	Leu	Glu	Leu	Trp	Ala	Gln	Gly
65				70				75					80		

Asn	Arg	Pro	Ile	Met	Val	Leu	Pro	Glu	Gly	Leu	His	Leu	Leu	Tyr	Thr
				85				90				95			

Arg	His	Lys	Ile	Arg	Leu	Pro	Arg	Glu	Glu	Pro	Ser	Asp	Ser	Val	Gln
			100				105				110				

Arg	Ala	His	Val	Thr	Ile
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<210> 4795
<211> 2117
<212> DNA
<213> Homo sapiens

<400> 4795

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180
tatttcttgt gtccctgcat aggtgtctcc acatctggtg gtataatcgg ctctctcaaa
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480
cagccagtga acagggagat ggatgctgcc ggctttgact tctcactgcc atgcactcaa
540
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600
gagggcagtg taaaacatgg tttaggagat gtttctatcc tcaagaagac attcagcacc
660
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aggcttcaga actcagattg gtttctcacc actttgaaag actgcatgac tcttcaccca
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780
aactggtgct tggccccacc agagggaaat gcaaacgtgg catttagccc atatggcttt
840
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960
gcaggagcat cactgtggac agtctatgag gacagtaaga gacagggcct gtccctggag
1020
attgtacagg gcttgcaagg acaggctggt cctgagagca tcagccctgt cgtgactgta
1080
ccccaaagag gcatcaggcc ctttgggaag ttggacagga acaccagaat ggccagcctt
1140
gactgcaagt ccctggagtg gcagcccctg gcaatacttc tggaacagaa aaacatggca
1200
gcagacgggc ccgtgctcaa ttcaccagag cccaagccag cccaaggcag ctgcttcctg
1260
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1320
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1380
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1440
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1500
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1560
ccatatcccc agcgcccagc ccagggcctg gtgtggagca gagcagaccc caccacggtt
1620
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1680
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1740
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1800
cagcagacca cactcaggtg ggccctgtaa gtgagccctt tcttccaaaa tggccactgg
1860
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1920
caaaccagct tctgagtaga atcctattac ataaaacctg acaagctgca gagggcatct
1980
ggtcacccat gtagttctat cagtgggcaʔ atccaagcac tctggagagg acaagtact
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2117

<210> 4796
<211> 541
<212> PRT

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<213> Homo sapiens

<400> 4796
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Ala Phe Arg Gly Glu Asp Phe His Leu Gln Met Gly Leu Gly Leu Leu
            20                  25                  30
Val Glu Gln Ala Leu Val Ala Phe Ile Ser Cys Gly Ser Arg Pro Ser
        35                  40                  45
Gly Ser Ser Glu Leu Arg Ala Gln Ala Cys Thr Ala His Ser Ala Gly
    50                  55                  60
Val Pro Gly Leu Ser Ile Pro Thr Ser Ser Trp Leu Pro Leu Met Lys
65                  70                  75                  80
Gly Pro Pro Glu Val Ala Gln Ser Asn Ile Gln Thr Gln Pro Val Asn
                85                  90                  95
Arg Glu Met Asp Ala Ala Gly Phe Asp Phe Ser Leu Pro Cys Thr Gln
            100                 105                 110
Lys Leu Thr Gln Asn Gly Thr Arg Ser Gln Trp Gly Leu Ser Leu Pro
        115                 120                 125
Ala Leu Met Thr Glu Gly Ser Val Lys His Gly Leu Gly Asp Val Ser
    130                 135                 140
Ile Leu Lys Lys Thr Phe Ser Thr Arg Leu Gln Asn Ser Asp Trp Phe
145                 150                 155                 160
Leu Thr Thr Leu Lys Asp Cys Met Thr Leu His Pro Leu Glu Ala Ser
                165                 170                 175
Pro Pro Gln Asp Lys Gln Pro Ser Ile Met Lys Asp Gln His Cys Met
            180                 185                 190
Asn Trp Cys Leu Ala Pro Pro Glu Gly Asn Ala Asn Val Ala Phe Ser
        195                 200                 205
Pro Tyr Gly Phe Leu Ala Trp Gly His Tyr Ile Ser Ala Met Asp Pro
    210                 215                 220
Cys Thr Leu Leu Pro Leu Ala Gly Pro His Ala Gln Ala Pro Gln Gly
225                 230                 235                 240
Val Ala Pro Lys Val Thr Thr Arg Gly Leu Gly Pro Ala Gly Ala Ser
                245                 250                 255
Leu Trp Thr Val Tyr Glu Asp Ser Lys Arg Gln Gly Leu Ser Leu Glu
            260                 265                 270
Ile Val Gln Gly Leu Gln Gly Gln Ala Gly Pro Glu Ser Ile Ser Pro
        275                 280                 285
Val Val Thr Val Pro Gln Arg Gly Ile Arg Pro Phe Gly Lys Leu Asp
    290                 295                 300
Arg Asn Thr Arg Met Ala Ser Leu Asp Cys Lys Ser Leu Glu Trp Gln
305                 310                 315                 320
Pro Leu Ala Ile Leu Leu Glu Gln Lys Asn Met Ala Ala Asp Gly Pro
                325                 330                 335
Val Leu Asn Ser Pro Glu Pro Lys Pro Ala Gln Gly Ser Cys Phe Leu
            340                 345                 350
Leu Gln Arg Val Ala Ser Glu Val Leu Cys Ala Thr Val Pro Ala Arg
        355                 360                 365
Gly Ile Gln Gly Trp Pro Glu Pro Lys Pro Ser Pro Gly Ser Glu Leu
    370                 375                 380
Ser Ala Leu Lys Ala His Glu Val Leu Gln Ile Met Leu Gly Leu Pro
385                 390                 395                 400
Thr Glu Asp Met Leu Val Arg Lys Gln Ala Pro Gln Pro Leu Phe Leu
```

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                405                 410                 415
Pro Asp Gly His Val Gln Leu Cys Ser Lys Gly Gln Gln Arg Leu Glu
            420                 425                 430
Gln Arg Ala Cys Arg Arg Arg Ser Arg Asp Asn Thr Gln Gln Arg Asn
        435                 440                 445
Thr Asp Met Ser Pro Tyr Pro Gln Arg Pro Ala Gln Gly Leu Val Trp
    450                 455                 460
Ser Arg Ala Asp Pro Thr Thr Val Thr Asp Ser Asp Ala Asp Ile Thr
465                 470                 475                 480
Leu Gln Ala Tyr Pro Ser Gly Val Lys Ser Trp Gly Cys Pro Gln Glu
                485                 490                 495
Ile Ser Ser Leu Val Trp Leu Thr Lys Ala Met Leu Ala Leu Arg Gly
            500                 505                 510
Gly Cys Ser Ser Ser Ser Ser Asp Ser Met Gly Arg Lys Ala Trp Val
        515                 520                 525
Leu Phe Asn Pro Gln Gln Thr Thr Leu Arg Trp Ala Leu
        530                 535                 540
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<210> 4797
<211> 2848
<212> DNA
<213> Homo sapiens


<400> 4797
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120
gcggcgctac caagccggcg gtctccggca agcagggcaa tgtgctcccg ctctggggca
180
acgagaagac catgaacctc aaccccatga tcctgaccaa catcctgtcg tcgccttact
240
tcaaagtaca gctctacgag ctcaagacct accacgaggt ggtggacgag atctacttta
300
aggtcacgca cgttgaacca tgggagaaag gaagcaggaa aacagcgggc cagacaggga
360
tgtgcggagg ggtaagtaga agttcgaggt gttggaacag gaggaattgt ttctacagca
420
ttttgcctgt tatacaaatt atttaccctg aagttaactc gaaagcaagt gatgggtctt
480
ataacacaca cagactctcc atatattaga gcgcttggat ttatgtatat aagatataca
540
cagcccccta cagatctgtg ggactggttt gaatccttcc ttgatgatga agaggactta
600
gatgtgaagg ctggtggagg ctgtgtaatg accattggag aaatgctacg atctttctc
660
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720
attgatcaac agattaaaac ccgacctaga aaaatcaaga agatgggaa ggaaggtgct
780
gaggaaatag acagacatgt tgaacgcaga cgttcaaggt ctccaaggag atctctgagt
840
ccacggaggt ccccaagaag gtcaagaagt agaagtcatc atcgggaggg ccatgggtct
900
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tctagttttg acagagaatt agaaagagag aaagaacgcc agcgactaga gcgtgaagcc
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cgcagcagaa gtagggaaag gcatagaagt cgcagtcgaa gtcgtgatag gaaaggggat
1080
agaagggaca gggatcgaga aagagagaaa gaaaatgaga gaggtagaag acgagatcgt
1140
gactatgata aggaaagagg aaatgaacga gaaaagaga gagagcgatc aagagaaagg
1200
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1260
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1380
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1440
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1560
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1620
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1680
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1740
acgttgagat tgtgcagtag ttcgcactcc tcaagctctc cctgtaggct gcattttcat
1800
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1860
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1920
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1980
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2040
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2160
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2220
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2280
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2340
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2400
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2460
ttaaagaaaa aaattaatgt ctaaagccta gcattcttgc agaaccctat actaacatgt
2520
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3979

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2640
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2700
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2760
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2848

<210> 4798
<211> 401
<212> PRT
<213> Homo sapiens

<400> 4798
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Phe Met Tyr Ile Arg Tyr Thr Gln Pro Pro Thr Asp Leu Trp Asp Trp
            20                  25                  30
Phe Glu Ser Phe Leu Asp Asp Glu Glu Asp Leu Asp Val Lys Ala Gly
        35                  40                  45
Gly Gly Cys Val Met Thr Ile Gly Glu Met Leu Arg Ser Phe Leu Thr
    50                  55                  60
Lys Leu Glu Trp Phe Ser Thr Leu Phe Pro Arg Ile Pro Val Pro Val
65                  70                  75                  80
Gln Lys Asn Ile Asp Gln Gln Ile Lys Thr Arg Pro Arg Lys Ile Lys
                85                  90                  95
Lys Asp Gly Lys Glu Gly Ala Glu Glu Ile Asp Arg His Val Glu Arg
            100                 105                 110
Arg Arg Ser Arg Ser Pro Arg Arg Ser Leu Ser Pro Arg Arg Ser Pro
            115                 120                 125
Arg Arg Ser Arg Ser Arg Ser His His Arg Glu Gly His Gly Ser Ser
    130                 135                 140
Ser Phe Asp Arg Glu Leu Glu Arg Glu Lys Glu Arg Gln Arg Leu Glu
145                 150                 155                 160
Arg Glu Ala Lys Glu Arg Glu Lys Glu Arg Arg Arg Ser Arg Ser Ile
            165                 170                 175
Asp Arg Gly Leu Glu Arg Arg Arg Ser Arg Ser Arg Glu Arg His Arg
            180                 185                 190
Ser Arg Ser Arg Ser Arg Asp Arg Lys Gly Asp Arg Arg Asp Arg Asp
    195                 200                 205
Arg Glu Arg Glu Lys Glu Asn Glu Arg Gly Arg Arg Arg Asp Arg Asp
    210                 215                 220
Tyr Asp Lys Glu Arg Gly Asn Glu Arg Glu Lys Glu Arg Glu Arg Ser
225                 230                 235                 240
Arg Glu Arg Ser Lys Glu Gln Arg Ser Arg Gly Glu Val Glu Glu Lys
            245                 250                 255
Lys His Lys Glu Asp Lys Asp Asp Arg Arg His Arg Asp Asp Lys Arg
            260                 265                 270
Asp Ser Lys Lys Glu Lys Lys His Ser Arg Ser Arg Ser Arg Glu Arg
```

3980

```
                275                     280                     285
Lys His Arg Ser Arg Ser Arg Ser Arg Asn Ala Gly Lys Arg Ser Arg
         290                     295                     300
Ser Arg Ser Lys Glu Lys Ser Ser Lys His Lys Asn Glu Ser Lys Glu
 305                     310                     315                     320
Lys Ser Asn Lys Arg Ser Arg Ser Gly Ser Gln Gly Arg Thr Asp Ser
                325                     330                     335
Val Glu Lys Ser Lys Lys Arg Glu His Ser Pro Ser Lys Glu Lys Ser
                340                     345                     350
Arg Lys Arg Ser Arg Ser Lys Glu Arg Ser His Lys Arg Asp His Ser
         355                     360                     365
Asp Ser Lys Asp Gln Ser Asp Lys His Asp Arg Arg Arg Ser Gln Ser
     370                     375                     380
Ile Glu Gln Glu Ser Gln Glu Lys Gln His Lys Asn Lys Asp Glu Thr
385                     390                     395                     400
Val
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<210> 4799
<211> 358
<212> DNA
<213> Homo sapiens


<400> 4799
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120
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180
cctccggcat cctggtcccc accccgagg gccctgagtc atgtgtttct ttttggagac
240
aggcccttt ggtgggtcca tgagtctggt tactacagcc aggctccagc ccaggttcac
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358


<210> 4800
<211> 119
<212> PRT
<213> Homo sapiens


<400> 4800
Ala Ser Leu Ala Gly Glu Arg Val Ala Leu Asp His Leu Ser Gly Arg
1               5                   10                  15
Ser Gln Asp Pro Leu Ser Val Leu Leu Pro Arg Gly Leu Leu Arg Leu
                20                  25                  30
Pro Pro Cys Gly His Arg Gly Ala Leu Asp Gln Pro His His Arg Val
            35                  40                  45
Ala Gln Pro His Leu Gln Val Val Arg Gln Arg Ser Pro Pro Ala Ser
        50                  55                  60
Trp Ser Pro Pro Arg Ala Leu Ser His Val Phe Leu Phe Gly Asp
65                  70                  75                  80
Arg Pro Phe Trp Trp Val His Glu Ser Gly Tyr Tyr Ser Gln Ala Pro
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```
                    85                   90                   95
Ala Gln Val His Gln Phe Pro Ser Ser Cys Glu Thr Gly Pro Gly Ser
               100                   105                   110
Pro Ser Gly His Cys Met Ile
           115


<210> 4801
<211> 1447
<212> DNA
<213> Homo sapiens

<400> 4801
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120
atagccgagg cgctacagaa ccagctagcc tggctggaga acgtgtggct ctggatcacc
180
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240
cgccgtgtgg gcatcgcggt gctctggatc agcctcatca ccgagtggct caacctcatc
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660
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720
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780
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840
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960
gccatggggc tgctgggccc cctggactgg ctgggccacc cccctcagat cagcctcttc
1020
tacattttca atttcctcaa gtacaccctc tggccatgcc tagtcctggc cctcgtgccc
1080
tgggcagtgc acatgttcag tgcccaggaa gcaccgccca tccactcttc ctgacttctt
1140
gtgtgcctcc ctttcctttc cctcccacaa agccaacact ctgtgaccac cacactccag
1200
gaggcagccc catcccctcc cagcccctaa gtaggccctc ccctccctaa atctgcttcc
1260
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gcaccacctg gtcttagccc caaagatggg ccttctctct cccagataag ttggtcctcc
1320
ctctgccttt cctctcaagc ccccaaagag caaaggcaac agcaagacca gcgggttctt
1380
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1440
aaaaaaa
1447

<210> 4802
<211> 377
<212> PRT
<213> Homo sapiens

<400> 4802
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Arg Pro Gly Ala Ser Arg Gly Leu Val Gly Ser Trp Ala Ala Met Glu
            20   25   30
Ser Thr Leu Gly Ala Gly Ile Val Ile Ala Glu Ala Leu Gln Asn Gln
            35   40   45
Leu Ala Trp Leu Glu Asn Val Trp Leu Trp Ile Thr Phe Leu Gly Asp
    50   55   60
Pro Lys Ile Leu Phe Leu Phe Tyr Phe Pro Ala Ala Tyr Tyr Ala Ser
65   70   75   80
Arg Arg Val Gly Ile Ala Val Leu Trp Ile Ser Leu Ile Thr Glu Trp
                85   90   95
Leu Asn Leu Ile Phe Lys Trp Phe Leu Phe Gly Asp Arg Pro Phe Trp
            100   105   110
Trp Val His Glu Ser Gly Tyr Tyr Ser Gln Ala Pro Ala Gln Val His
        115   120   125
Gln Phe Pro Ser Ser Cys Glu Thr Gly Pro Gly Ser Pro Ser Gly His
    130   135   140
Cys Met Ile Thr Gly Ala Ala Leu Trp Pro Ile Met Thr Ala Leu Ser
145   150   155   160
Ser Gln Val Ala Thr Arg Ala Arg Ser Arg Trp Val Arg Val Met Pro
                165   170   175
Ser Leu Ala Tyr Cys Thr Phe Leu Leu Ala Val Gly Leu Ser Arg Ile
            180   185   190
Phe Ile Leu Ala His Phe Pro His Gln Val Leu Ala Gly Leu Ile Thr
        195   200   205
Gly Ala Val Leu Gly Trp Leu Met Thr Xaa Pro Glu Cys Leu Trp Ser
    210   215   220
Gly Ser Xaa Ser Phe Tyr Gly Leu Thr Ala Leu Ala Leu Met Leu Gly
225   230   235   240
Thr Ser Leu Ile Tyr Trp Thr Leu Phe Thr Leu Gly Leu Asp Leu Ser
                245   250   255
Trp Ser Ile Ser Leu Ala Phe Lys Trp Cys Glu Arg Pro Glu Trp Ile
            260   265   270
His Val Asp Ser Arg Pro Phe Ala Ser Leu Ser Arg Asp Ser Gly Ala
        275   280   285
Ala Leu Gly Leu Gly Ile Ala Leu His Ser Pro Cys Tyr Ala Gln Val
    290   295   300
Arg Arg Ala Gln Leu Gly Asn Gly Gln Lys Ile Ala Cys Leu Val Leu

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305                     310                     315                     320
Ala Met Gly Leu Leu Gly Pro Leu Asp Trp Leu Gly His Pro Pro Gln
                325                     330                     335
Ile Ser Leu Phe Tyr Ile Phe Asn Phe Leu Lys Tyr Thr Leu Trp Pro
                340                     345                     350
Cys Leu Val Leu Ala Leu Val Pro Trp Ala Val His Met Phe Ser Ala
                355                     360                     365
Gln Glu Ala Pro Pro Ile His Ser Ser
    370                     375
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<210> 4803
<211> 564
<212> DNA
<213> Homo sapiens

<400> 4803

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ggaaagccca ggacttagaa tcagcacact taggcactag cttataaaat attctgttgt
60
ataaaaaaag agagagagtg cctgtgtgca catgctgccc tgtacctagc cacatgactt
120
ccaaaacctg ctaatgcctg atttccatta cgtgctactc ctcaaatggc agcggcttct
180
gaatattaca gagatggtgt gctgtttgct tttctctttt gttgtagcat aaaactgttc
240
attttagctt agtgacattt gtcaagaata gcaacctttt tgcttccaag ggacttgaag
300
gaagttaaat ttagatgctt tcctctcttc ttattttgtg gaggtatttc ctgttcagta
360
gcaaatcagt tatagaatat attagcattg ttatatttta aactaatgac taatcatttc
420
agctttattc atactgttgc attttatatt tcacagggag caatagaaaa agtgaaagaa
480
agtgacaaac tagttgcaac aagtaaaatc accctacaag acaaacagaa catggtgaag
540
agagtcagca tcatgtctta cgcg
564
```

<210> 4804
<211> 53
<212> PRT
<213> Homo sapiens

<400> 4804

```
Met Thr Asn His Phe Ser Phe Ile His Thr Val Ala Phe Tyr Ile Ser
1               5                   10                  15
Gln Gly Ala Ile Glu Lys Val Lys Glu Ser Asp Lys Leu Val Ala Thr
            20                  25                  30
Ser Lys Ile Thr Leu Gln Asp Lys Gln Asn Met Val Lys Arg Val Ser
            35                  40                  45
Ile Met Ser Tyr Ala
    50
```

<210> 4805
<211> 1619

<212> DNA
<213> Homo sapiens

<400> 4805
ggccttggat acctggcccg ggatgctggg cggcgtcagg taaccatgga gaaagagctg
60
cggagtacca ttcttttcaa tgcctacaaa aaggagatat ttaccaccaa caatggctac
120
aaatccatgc agaaaaaact tcggagtaat tggaagattc agagcttaaa agatgaaatc
180
acatctgaga agttaaatgg agtaaaactg tggattacag ctgggccaag ggaaaaattt
240
actgcagctg agtttgaaat cctgaagaaa tatcttgaca ctggtgggga tgtccttgtg
300
atgctagggg aaggtggaga atccagattt gacaccaata ttaacttttt actagaagaa
360
tatggaatca tggttaataa tgatgctgtg gttagaaatg tatatcacaa atatttccat
420
cctaaagaag ctctagtttc cagtggagtc ttgaacaggg aaattagccg agctgcagga
480
aaggctgtgc tggcgatcat tgatgaggaa agcagtggaa acaatgccca ggctctcacc
540
tttgtgtatc cttttggtgc cacattgagt gtcatgaaac cagcagtggc ggttctgtct
600
acaggttctg tctgcttccc acttaacaga cccattttgg ctttctatca ctcaaagaac
660
caaggtggga agctggcagt gcttggttca tgtcacatgt tcagtgatca atatttggac
720
aaagaagaaa acagcaaaat catggatgtt gttgtttttcc agtggctcac gacaggagac
780
atccacctaa accagattga tgctgaggac ccagagattt ctgactacat gatgctgccc
840
tacacagcca ccctatcaaa gcggaatcga gagtgtctcc aggagagtga tgagatccca
900
agggacttta ccaccctctt cgacctgtcc atcttccagc tggataccac ctccttccac
960
agcgtcatcg aggctcacga gcagctaaat gtgaaacatg aaccactcca gctcatccag
1020
cctcagtttg agacgccgct gccaaccctt cagcctgcgg tttttcctcc cagtttccgg
1080
gagttaccac ctcctcctct ggagctattt gatttagatg aaacgttctc ctctgagaag
1140
gcacggctgg ctcagattac caataagtgt actgaagaag acctggaatt ttatgtcagg
1200
aagtgtggtg atattcttgg agtaaccagt aaactaccaa aggaccaaca ggatgccaaa
1260
catatccttg agcacgtctt cttccaagtg gtggagttca gaaattgaa ccaggaacat
1320
gacatcgata caagtgaaac agcattccag aacaatttct gaagaccatg cctcttgaag
1380
ctttttctgc ctcctgattc tctctttgta aactattttc aaattgtttt tcaactcctt
1440
atcaaaattg tttatacact cttttcctcca tgagctctgg aaggtatatg catcttctgt
1500

aatactcaga taggtataag atttttcaca aaatccttat gtaagataca ttccattttt
1560
aaaaattaaa tgtatggttg catctgtctt tttatacccct aaaaaaaaaa aaaaaaaaa
1619

<210> 4806
<211> 438
<212> PRT
<213> Homo sapiens

<400> 4806
Met Glu Lys Glu Leu Arg Ser Thr Ile Leu Phe Asn Ala Tyr Lys Lys
1   5   10   15
Glu Ile Phe Thr Thr Asn Asn Gly Tyr Lys Ser Met Gln Lys Lys Leu
            20   25   30
Arg Ser Asn Trp Lys Ile Gln Ser Leu Lys Asp Glu Ile Thr Ser Glu
        35   40   45
Lys Leu Asn Gly Val Lys Leu Trp Ile Thr Ala Gly Pro Arg Glu Lys
    50   55   60
Phe Thr Ala Ala Glu Phe Glu Ile Leu Lys Lys Tyr Leu Asp Thr Gly
65   70   75   80
Gly Asp Val Leu Val Met Leu Gly Glu Gly Gly Glu Ser Arg Phe Asp
                85   90   95
Thr Asn Ile Asn Phe Leu Leu Glu Glu Tyr Gly Ile Met Val Asn Asn
            100   105   110
Asp Ala Val Val Arg Asn Val Tyr His Lys Tyr Phe His Pro Lys Glu
        115   120   125
Ala Leu Val Ser Ser Gly Val Leu Asn Arg Glu Ile Ser Arg Ala Ala
        130   135   140
Gly Lys Ala Val Leu Ala Ile Ile Asp Glu Glu Ser Ser Gly Asn Asn
145   150   155   160
Ala Gln Ala Leu Thr Phe Val Tyr Pro Phe Gly Ala Thr Leu Ser Val
            165   170   175
Met Lys Pro Ala Val Ala Val Leu Ser Thr Gly Ser Val Cys Phe Pro
            180   185   190
Leu Asn Arg Pro Ile Leu Ala Phe Tyr His Ser Lys Asn Gln Gly Gly
            195   200   205
Lys Leu Ala Val Leu Gly Ser Cys His Met Phe Ser Asp Gln Tyr Leu
    210   215   220
Asp Lys Glu Glu Asn Ser Lys Ile Met Asp Val Val Val Phe Gln Trp
225   230   235   240
Leu Thr Thr Gly Asp Ile His Leu Asn Gln Ile Asp Ala Glu Asp Pro
            245   250   255
Glu Ile Ser Asp Tyr Met Met Leu Pro Tyr Thr Ala Thr Leu Ser Lys
            260   265   270
Arg Asn Arg Glu Cys Leu Gln Glu Ser Asp Glu Ile Pro Arg Asp Phe
        275   280   285
Thr Thr Leu Phe Asp Leu Ser Ile Phe Gln Leu Asp Thr Thr Ser Phe
    290   295   300
His Ser Val Ile Glu Ala His Glu Gln Leu Asn Val Lys His Glu Pro
305   310   315   320
Leu Gln Leu Ile Gln Pro Gln Phe Glu Thr Pro Leu Pro Thr Leu Gln
            325   330   335
Pro Ala Val Phe Pro Pro Ser Phe Arg Glu Leu Pro Pro Pro Pro Leu

```
          340                    345                    350
Glu Leu Phe Asp Leu Asp Glu Thr Phe Ser Ser Glu Lys Ala Arg Leu
         355                    360                    365
Ala Gln Ile Thr Asn Lys Cys Thr Glu Glu Asp Leu Glu Phe Tyr Val
         370                    375                    380
Arg Lys Cys Gly Asp Ile Leu Gly Val Thr Ser Lys Leu Pro Lys Asp
385                    390                    395                    400
Gln Gln Asp Ala Lys His Ile Leu Glu His Val Phe Phe Gln Val Val
                  405                    410                    415
Glu Phe Lys Lys Leu Asn Gln Glu His Asp Ile Asp Thr Ser Glu Thr
             420                    425                    430
Ala Phe Gln Asn Asn Phe
         435
```

```
<210> 4807
<211> 1177
<212> DNA
<213> Homo sapiens


<400> 4807
ntgggactct gcccctctac ctcagcacag aatcgccccg ggtcctacta cagaatcaat
60
ccttgaacac tgcctccacg tcgccggctc aatctgggcg agaacccaga cttccaccgc
120
agccccgcaa tctgcagacc tcagcggcag cgcaggtggc agacctgcct cctttgcctg
180
tgagtcatgg cagctcccat gaatggccaa gtgtgtgtgg tgactggtgc ctccaggggt
240
attggccgtg gcattgcctt gcagctctgc aaagcaggcg ccacagttta catcactggc
300
cgccatctgg acacccttcg cgttgttgct caggaggcac aatccctcgg gggccaatgt
360
gtgcctgtgg tgtgcgattc aagccaggag agtgaagtgc gaagcctgtt tgagcaagtg
420
gatcgggaac agcaagggcg tctagatgtg ctggtcaaca atgcttatgc aggggtccag
480
acgatcctga acaccaggaa taaggcattc tgggaaaccc ctgcctccat gtgggatgat
540
atcaacaacg tcggactcag aggccactac ttttgctcag tgtatggggc acggctgatg
600
gtaccagctg gccagggggct catcgtggtc atctcctccc caggaagcct gcagtatatg
660
ttcaatgtcc cctatggtgt gggcaaagct gcgtgtgaca agctggctgc tgactgtgcc
720
cacgagctgc ggcgccatgg ggtcagctgt gtgtctctgt ggccggggat tgtgcagaca
780
gaactgctga aggagcatat ggcaaaggag gaggtcctgc aggatcctgt gttgaagcag
840
ttcaaatcag ccttctcatc tgcggaaacc acagaattga gtggcaaatg tgtggtggct
900
ttggcaacag atcccaatat cctgagcctg agtggtaagg tgctgccatc ctgtgacctt
960
gctcgacgct atggccttcg ggatgtggac ggccgccccg tccaagacta tttgtctttg
1020
```

agctctgttc tctcacacgt gtccggcctg ggctggctgg cctcctacct gccctccttc
1080
ctccgtgtgc ccaagtggat tattgccctc tacactagca agttctaacc ctcctggtct
1140
gacactacgt ctctgcttgt ctgagaagac aacgcgt
1177

<210> 4808
<211> 313
<212> PRT
<213> Homo sapiens

<400> 4808
Met Ala Ala Pro Met Asn Gly Gln Val Cys Val Val Thr Gly Ala Ser
1   5   10   15
Arg Gly Ile Gly Arg Gly Ile Ala Leu Gln Leu Cys Lys Ala Gly Ala
            20   25   30
Thr Val Tyr Ile Thr Gly Arg His Leu Asp Thr Leu Arg Val Val Ala
        35   40   45
Gln Glu Ala Gln Ser Leu Gly Gly Gln Cys Val Pro Val Val Cys Asp
    50   55   60
Ser Ser Gln Glu Ser Glu Val Arg Ser Leu Phe Glu Gln Val Asp Arg
65   70   75   80
Glu Gln Gln Gly Arg Leu Asp Val Leu Val Asn Asn Ala Tyr Ala Gly
                85   90   95
Val Gln Thr Ile Leu Asn Thr Arg Asn Lys Ala Phe Trp Glu Thr Pro
            100   105   110
Ala Ser Met Trp Asp Asp Ile Asn Asn Val Gly Leu Arg Gly His Tyr
        115   120   125
Phe Cys Ser Val Tyr Gly Ala Arg Leu Met Val Pro Ala Gly Gln Gly
    130   135   140
Leu Ile Val Val Ile Ser Ser Pro Gly Ser Leu Gln Tyr Met Phe Asn
145   150   155   160
Val Pro Tyr Gly Val Gly Lys Ala Ala Cys Asp Lys Leu Ala Ala Asp
            165   170   175
Cys Ala His Glu Leu Arg Arg His Gly Val Ser Cys Val Ser Leu Trp
        180   185   190
Pro Gly Ile Val Gln Thr Glu Leu Leu Lys Glu His Met Ala Lys Glu
        195   200   205
Glu Val Leu Gln Asp Pro Val Leu Lys Gln Phe Lys Ser Ala Phe Ser
    210   215   220
Ser Ala Glu Thr Thr Glu Leu Ser Gly Lys Cys Val Val Ala Leu Ala
225   230   235   240
Thr Asp Pro Asn Ile Leu Ser Leu Ser Gly Lys Val Leu Pro Ser Cys
            245   250   255
Asp Leu Ala Arg Arg Tyr Gly Leu Arg Asp Val Asp Gly Arg Pro Val
            260   265   270
Gln Asp Tyr Leu Ser Leu Ser Ser Val Leu Ser His Val Ser Gly Leu
        275   280   285
Gly Trp Leu Ala Ser Tyr Leu Pro Ser Phe Leu Arg Val Pro Lys Trp
        290   295   300
Ile Ile Ala Leu Tyr Thr Ser Lys Phe
305   310

```
<210> 4809
<211> 999
<212> DNA
<213> Homo sapiens

<400> 4809
tccggagagg gccttgtcac attctcctac tccccaagtg aggcctccgt ccttctgttc
60
cccatgtgag gcctccatgg aatgaggagg ggtctgtccc agcagtgcct accctgcttc
120
tcctgtaaga gactgttccc tcctcccaca cttccttgag aagcacttgc ccctccagga
180
taacagcatc actgagcctg gggaacagac agtccctagt ccaagccctg gaggtaagaa
240
aggaggggcc ggccaggatg ctcagtgtgg tcagcatagg ccaggcccct gctaccttga
300
ccctgagggc cagagcacag gcggaactcg dacatagggc cacaggtgac tgcttaatga
360
caaccatgct agctcctggc aatgaggggt caggagcgtg tgtgaataat ggggcacctg
420
acccagggct ggggtacaga gggtgggggt tacaaatggt tcatctgtcg caggacacct
480
ggaggatgag gaaagagccc ccaggcaaac ccattctgtg agcaattccc atctgctgtc
540
tccaaatcct gtctagactc tgaccctgct ggccccttcc agggctccca gcctggttgc
600
cacagcggcc tcctaaccaa cacccctgcg gctctggtac cagcccacgc cagacagaga
660
agccagccat cattgctcct gtcttcctcc ccgagaaagt cgaggtcctg gcagggctca
720
gggcctatgt ggccaggccc tggatacttc cctgacctca cctcccctac agcacagccc
780
cttcagctcc tggggctttt gcacggctgc tcctttcctc cccctctgcc ctcaggccag
840
ccttgtccct gatcactacc ttcttcattt ctgtacctgg ctgacatctg tccttccccg
900
ccaactacaa ggtagacccc gggagggcag ggatggtgca ctgtgttcag ggtgcatttg
960
ccgccagtgg agggaggcac ccaggccact cccgccggc
999


<210> 4810
<211> 120
<212> PRT
<213> Homo sapiens

<400> 4810
Gly Lys Ser Pro Gln Ala Asn Pro Phe Cys Glu Gln Phe Pro Ser Ala
1               5                   10                  15
Val Ser Lys Ser Cys Leu Asp Ser Asp Pro Ala Gly Pro Phe Gln Gly
            20                  25                  30
Ser Gln Pro Gly Cys His Ser Gly Leu Leu Thr Asn Thr Pro Ala Ala
        35                  40                  45
Leu Val Pro Ala His Ala Arg Gln Arg Ser Gln Pro Ser Leu Leu Leu
```

```
      50                    55                   60
Ser Ser Ser Pro Arg Lys Ser Arg Ser Trp Gln Gly Ser Gly Pro Met
65                    70                   75                   80
Trp Pro Gly Pro Gly Tyr Phe Pro Asp Leu Thr Ser Pro Thr Ala Gln
                 85                   90                   95
Pro Leu Gln Leu Leu Gly Ala Leu His Gly Cys Ser Phe Pro Pro Pro
              100                  105                  110
Leu Pro Ser Gly Gln Pro Cys Pro
           115                  120
```

<210> 4811
<211> 3207
<212> DNA
<213> Homo sapiens

<400> 4811

```
nttagtctgc ccccacctct gcacccgccc ccggagggca cccgaggacc atgactatga
60
cagatcctgc ctcgatggcc ccgccacccc gagaagagga ggaagaagag gaggaggagg
120
atgaacccgt cccagaagcc cccagcccca cccaggagcg ccggcagaag cctgttgtgc
180
accccctcggc acctgccccc ctccctaagg actacgcttt taccttcttc gaccccaatg
240
acccggcgtg ccaggagatc ctgtttgacc ctcagaccac catccccgag ctgtttgcca
300
ttgtgcgcca gtgggtgccc caagtccagc acaagataga cgtcatcggc aatgagattc
360
tgcgccgagg ctgccatgtg aacgatcgtg acgggctgac cgacatgaca ctgctccact
420
atgcgtgcaa agctggggcc cacggagtcg gggacccgcg gcagcgtgcg cctctcgcag
480
cagctgctgg cgctgggcga gatgtgacgc tgcgtagcgc tggaccaaca tgaacgcgct
540
tcactacgcg gcctattttg atgtgcccga cctcgtgcgt gtgctgctga agggtgcgag
600
gccgcgagtg gtgaactcca cgtgcagtga cttcaaccac ggctcagccc tgcacatcgc
660
tgcttccagc ctgtgcctgg cgccgcaaa tgtttgctgg agcacggcgc caaccctgcg
720
ctgaggaatc gaaaaggaca ggtgccggcg gaggtggtcc cagatcctat ggacatgtcc
780
ctggacaagg cagaggcggc actggtggcc aaggagctgc ggacgcttct ggaagaggca
840
gtgccactat cttgcgccct ccccaaggtc acgctaccca actatgacaa cgtcccaggc
900
aatctcatgc ttagcgcact gggcttgcgc ctgggagacc gcgtgctgct ggatggccag
960
aagacgggca cactgcggtt ctgtgggacc acggagtttg ccagcggcag ttgggtgggc
1020
gtggagctgg acgaacctga gggcaagaac gatggcagcg ttggggggcgt tcggtacttc
1080
atctgccctc ccaagcaggg tctctttgcc tccgtgtcca agatctccaa ggcagtggac
1140
```

3990

gcacccccct cctctgtcac ctccacaccc gaccccccc ggatggactt ctcccgtgtc
1200
accggcaaag gccgcaggga acacaaaggc aagaagaaga ccccatcatc cccatctctg
1260
ggcagcttgc agcagcgtga cggggccaag gctgaggttg agaccaggt ccttgtcgcg
1320
ggccagaagc aggggatcgt gcgcttctac gggaagacag actttgcccc aggttactgg
1380
tatggcattg agctggacca gcccacaggc aagcatgatg gctctgtctt cggtgtccgg
1440
tacttcactt gcccccgag gcatggggtc ttcgcaccag catcccgtat tcagaggatt
1500
ggcggatcca ctgattcccc cggggacagc gttggagcca aaaaagtgca tcaagtgaca
1560
atgacgcagc ccaaacgcac cttcaccaca gtccggaccc caaaggacat tgcatcagag
1620
aactccattt ccaggttgct gttctgctgc tggttcccct ggatgctgag ggcggagatg
1680
cagtcttaga ggccctggac acctgacaaa gagacagagt ccccactagc atctcctgac
1740
acccgaggag ccctgagtca ccctgagata gagattccca gtaacacatc cagagtagag
1800
acccctgtta gccagccctc gatcattgag gccccattat taacagatac tcccataata
1860
accccaaat acagacccca tgtcacccag aaagagattc cctgagtagc accttcaggc
1920
tagtccctat ccccaacccc tcagagcaga ttcccagatt aacagatttc catatcaccc
1980
caaatgatgg tgaccctctc cacataatgc attacaacag aacattcttg aatcacccaa
2040
ccctggatca gaaacctccc cattaacaaa cactgcccct taagtcctct tgaaataaac
2100
ataggtcaca ccccaaagc aaaagagtaa cagacattca tgtcattgtt ccccatttaa
2160
catcagtcct ctcaagatgt cgtgacccca tggtcaccct gaagcccta gattccaacc
2220
cctcaatcag agacttcctt cattaacaaa gacccttgtt cttatccctc aagaagaaac
2280
ccaccataac cagcccactg tcacccctaa tttacagaca ccaaaacagt cctggaagtg
2340
ctaattacag gaccccccaa gtcttcctac cctctgcacc ctcaagaaac ccccagtgcc
2400
ttgtatgaag cccacccac atggcccaca gctcctgtgc tggccagact cccagaaaat
2460
tctctatttt ttaagtaacg acttcccct ttggggacc ccaaaatttg gaggccccat
2520
tctaggactc tggggatccc aaaccctaga gtacacacgt cccaaactcc cctgtgccct
2580
caagtcctac agcccctaga agaccccaat gccgtaactc ctaggacccc caaatcatgg
2640
aatcccaaat ccccagggaa tcccaaattt gaaaatccaa tcccaagtcc ccaggaaacc
2700
caatcatgag gtccttgtgc ctggtatgga ggagactgca gtcaggatat gcattccagg
2760

3991

```
ctcccagaca cctcaagccc tattcacagg caccaggaaa ccccacacag gaattcccat
2820
ccctggaaac tggagaattt caatgccccg agtccatggg tttcaagaca ccaaattcca
2880
agagccccag ccctaaggga accccaaatc ctaaagcctc catctctaat aaatggaagg
2940
ccccaaggcc ctgaggggat ctcaaatcct ggaaccccga tttcaatcta cgttctagtc
3000
actggcctca aaggacccca cagcacctgg gccagaccaa cagctcgagg gagaacctga
3060
aggcccaggg ggtccagggc ggacctgggg ccccgaccac caaggacagc tcacgactgc
3120
cccttcactg catgtcccca aactcagcat gactcctgtc ctcttcaata aagacgtttc
3180
tatggccaaa aaaaaaaaaa aaaaaaa
3207
```

<210> 4812
<211> 306
<212> PRT
<213> Homo sapiens

<400> 4812

```
Met Asp Met Ser Leu Asp Lys Ala Glu Ala Ala Leu Val Ala Lys Glu
1               5                   10                  15
Leu Arg Thr Leu Leu Glu Glu Ala Val Pro Leu Ser Cys Ala Leu Pro
            20                  25                  30
Lys Val Thr Leu Pro Asn Tyr Asp Asn Val Pro Gly Asn Leu Met Leu
        35                  40                  45
Ser Ala Leu Gly Leu Arg Leu Gly Asp Arg Val Leu Leu Asp Gly Gln
    50                  55                  60
Lys Thr Gly Thr Leu Arg Phe Cys Gly Thr Thr Glu Phe Ala Ser Gly
65                  70                  75                  80
Ser Trp Val Gly Val Glu Leu Asp Glu Pro Glu Gly Lys Asn Asp Gly
                85                  90                  95
Ser Val Gly Gly Val Arg Tyr Phe Ile Cys Pro Pro Lys Gln Gly Leu
            100                 105                 110
Phe Ala Ser Val Ser Lys Ile Ser Lys Ala Val Asp Ala Pro Pro Ser
        115                 120                 125
Ser Val Thr Ser Thr Pro Gly Pro Pro Arg Met Asp Phe Ser Arg Val
    130                 135                 140
Thr Gly Lys Gly Arg Arg Glu His Lys Gly Lys Lys Lys Thr Pro Ser
145                 150                 155                 160
Ser Pro Ser Leu Gly Ser Leu Gln Gln Arg Asp Gly Ala Lys Ala Glu
                165                 170                 175
Val Gly Asp Gln Val Leu Val Ala Gly Gln Lys Gln Gly Ile Val Arg
            180                 185                 190
Phe Tyr Gly Lys Thr Asp Phe Ala Pro Gly Tyr Trp Tyr Gly Ile Glu
        195                 200                 205
Leu Asp Gln Pro Thr Gly Lys His Asp Gly Ser Val Phe Gly Val Arg
    210                 215                 220
Tyr Phe Thr Cys Pro Pro Arg His Gly Val Phe Ala Pro Ala Ser Arg
225                 230                 235                 240
Ile Gln Arg Ile Gly Gly Ser Thr Asp Ser Pro Gly Asp Ser Val Gly
```

3992

```
                         245                    250                    255
Ala Lys Lys Val His Gln Val Thr Met Thr Gln Pro Lys Arg Thr Phe
                 260                    265                    270
Thr Thr Val Arg Thr Pro Lys Asp Ile Ala Ser Glu Asn Ser Ile Ser
             275                    280                    285
Arg Leu Leu Phe Cys Cys Trp Phe Pro Trp Met Leu Arg Ala Glu Met
         290                    295                    300
Gln Ser
305
```

```
<210> 4813
<211> 400
<212> DNA
<213> Homo sapiens
```

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<400> 4813
tggccacact tacccaacag gtaggaggta cagggaggat taaactgaac gcggttcctg
60
gtgggtgtcc tgcacatgct gctgtctcct tggggctctg cacctgccct cctgtctgcc
120
agtgactgtg ggtgggaaag gaggccgtgg tggctgcagc tttcctctgc aaacctccac
180
ctcgcccaca gggcttggct tttcctccag ctgtccagga aaccaccatc atgattgtta
240
aacacagatt tgaacattca cgaagaaact tccagggtga gccaaaccct cttcctcccc
300
actgcacctc caagcagcct tcctgaaagg gaaaagagta cagacctgcc ctctggggac
360
ccctgtgccc tgccatgacc agcctttccc cttcacgcgt
400
```

```
<210> 4814
<211> 125
<212> PRT
<213> Homo sapiens
```

```
<400> 4814
Met Ala Gly His Arg Gly Pro Gln Arg Ala Gly Leu Tyr Ser Phe Pro
1               5                   10                  15
Phe Gln Glu Gly Cys Leu Glu Val Gln Trp Gly Gly Arg Gly Phe Gly
             20                  25                  30
Ser Pro Trp Lys Phe Leu Arg Glu Cys Ser Asn Leu Cys Leu Thr Ile
         35                  40                  45
Met Met Val Val Ser Trp Thr Ala Gly Gly Lys Ala Lys Pro Cys Gly
     50                  55                  60
Arg Gly Gly Gly Leu Gln Arg Lys Ala Ala Ala Thr Thr Ala Ser Phe
65                  70                  75                  80
Pro Thr His Ser His Trp Gln Thr Gly Gly Gln Val Gln Ser Pro Lys
             85                  90                  95
Glu Thr Ala Ala Cys Ala Gly His Pro Pro Gly Thr Ala Phe Ser Leu
             100                 105                 110
Ile Leu Pro Val Pro Pro Thr Cys Trp Val Ser Val Ala
         115                 120                 125
```

<210> 4815
<211> 528
<212> DNA
<213> Homo sapiens

<400> 4815
nngcgcgcca ggagctctgc attgaaggca ctggggtaaa gtgaatgccg aagacagaag
60
atttggatga tacaccactg actttctttg tttggaatac acgttatgaa cccttтctgg
120
agcatgtcta caagctctgt acgcaaacga tctgaaggtg aagagaagac attaacaggg
180
gacgtgaaaa ccagtcctcc acgaactgca ccaaagaaac agctaccttc tattcccaaa
240
aatgctттgc ccataactaa gcctacatca cctgccccag cagcacagtc aacaaatggc
300
acccatgcct cттacggacc cттctacctg gaatattcac tccttgcaga atттaccттg
360
gттgтgaagc agaagctacc aggcgтctat gтgcagccat cттatcgctc tgcattaatg
420
tagtттggag taatattcat acggcatgga cтттaccaag atggcgтatt taagтттaca
480
gтттacatcc ctgataacta tccagatggт gactgтccac gcттggтg
528

<210> 4816
<211> 105
<212> PRT
<213> Homo sapiens

<400> 4816
Met Asn Pro Phe Trp Ser Met Ser Thr Ser Ser Val Arg Lys Arg Ser
1   5   10   15
Glu Gly Glu Glu Lys Thr Leu Thr Gly Asp Val Lys Thr Ser Pro Pro
            20   25   30
Arg Thr Ala Pro Lys Lys Gln Leu Pro Ser Ile Pro Lys Asn Ala Leu
        35   40   45
Pro Ile Thr Lys Pro Thr Ser Pro Ala Pro Ala Ala Gln Ser Thr Asn
    50   55   60
Gly Thr His Ala Ser Tyr Gly Pro Phe Tyr Leu Glu Tyr Ser Leu Leu
65   70   75   80
Ala Glu Phe Thr Leu Val Val Lys Gln Lys Leu Pro Gly Val Tyr Val
                85   90   95
Gln Pro Ser Tyr Arg Ser Ala Leu Met
            100   105

<210> 4817
<211> 1106
<212> DNA
<213> Homo sapiens

<400> 4817
nntgatcagg aagcgggagc gtagggccac gcctgcggcg ctgctggттg aggctgтgтg
60

3994

```
ggtgggggac gggccgaggc gatggcggag aagtttgacc acctagagga gcacctggag
120
aagttcgtgg agaacattcg gcagctcggc atcatcgtca gtgacttcca gcccagcagc
180
caggccgggc tcaaccaaaa gctgaatttt attgttactg gcttacagga tattgacaag
240
tgcagacagc agcttcatga tattactgta ccgttagaag tttttgaata tatagatcaa
300
ggtcgaaatc cccagctcta caccaaagag tgcctggaga gggctctagc taaaaatgag
360
caagttaaag gcaagatcga caccatgaag aaatttaaaa gcctgttgat tcaagaactt
420
tctaaagtat ttccggaaga catggctaag tatcgaagca tccgggggga ggatcacccg
480
ccttcttaac cagctcaccc tccctgtgtg aagatccccc gggactgcga tgcggcgtga
540
ggctgggact gcgagtgctg acgccacctt cctgctgagg tgggactggg ccctggacac
600
acccctcagc ccctctgtcc tcattgtttg gcctcatggg accgagggc tggaggagag
660
gcggagctgt gccccagctg ttccagcagc ttgtctggcg tcaactggct ttcagagtgc
720
tgacccctca tcactgtggg gatcattctc tctgagggca gatgaggcgc aggaaaatag
780
tcttggaaat gttaaatatg atgggtaaat taaaagtttt acaacattct acctaatatt
840
tttctttaa catacttttt ctgttctatt gtattatggt gtccgaaagc taaataacga
900
ctaggaaaaa ttttttaaa aaaagaaaaa tcagtttaat gtgggaagta cttaagtggt
960
attatatttt acattttcaa gtatagtgca taaagaatgt tttaaatgta actgttttca
1020
tggatttcaa ttagacatgc ctataataaa ctaagtatgt ggcttaaaaa aaaaaaaaaa
1080
aaaaaaaaaa aaaaaaaaaa aaaaaa
1106


<210> 4818
<211> 135
<212> PRT
<213> Homo sapiens

<400> 4818
Met Ala Glu Lys Phe Asp His Leu Glu Glu His Leu Glu Lys Phe Val
1               5                   10                  15
Glu Asn Ile Arg Gln Leu Gly Ile Ile Val Ser Asp Phe Gln Pro Ser
            20                  25                  30
Ser Gln Ala Gly Leu Asn Gln Lys Leu Asn Phe Ile Val Thr Gly Leu
        35                  40                  45
Gln Asp Ile Asp Lys Cys Arg Gln Gln Leu His Asp Ile Thr Val Pro
    50                  55                  60
Leu Glu Val Phe Glu Tyr Ile Asp Gln Gly Arg Asn Pro Gln Leu Tyr
65                  70                  75                  80
Thr Lys Glu Cys Leu Glu Arg Ala Leu Ala Lys Asn Glu Gln Val Lys
```

```
              85                    90                    95
Gly Lys Ile Asp Thr Met Lys Lys Phe Lys Ser Leu Leu Ile Gln Glu
            100                   105                   110
Leu Ser Lys Val Phe Pro Glu Asp Met Ala Lys Tyr Arg Ser Ile Arg
        115                   120                   125
Gly Glu Asp His Pro Pro Ser
    130                   135
```

<210> 4819
<211> 1655
<212> DNA
<213> Homo sapiens

<400> 4819

```
cggccgcggc ccggactccg cggtgggcga gcgccctgtg aggtgaccat ggaggctggt
60
ggcctcccct tggagctgtg gcgcatgatc ttagcctact tgcaccttcc cgacctgggc
120
cgctgcagcc tggtatgcag ggcctggtat gaactgatcc tcagtctcga cagcacccgc
180
tggcggcagc tgtgtctggg ttgcaccgag tgccgccatc ccaattggcc caaccagcca
240
gatgtggagc ctgagtcttg gagagaagcc ttcaagcagc attaccttgc atccaagaca
300
tggaccaaga atgccttgga cttggagtct tccatctgct tttctctatt ccgccggagg
360
agggaacgac gtaccctgag tgttgggcca ggccgtgagt ttgacagcct gggcagtgcc
420
ttggccatgg ccagcctgta tgaccgaatt gtgctcttcc caggtgtgta cgaagagcaa
480
ggtgaaatca tcttgaaggt gcctgtggag attgtagggc aggggaagtt gggtgaagtg
540
gccctgctgg ccagcattga tcagcactgc tcaaccacac gcctgtgcaa cctcgtcttc
600
acgccagcct ggttctcacc catcatgtat aagacaacat caggtcacgt ccagtttgac
660
aactgcaact ttgagaacgg cacatccag tccatggcc cgggtacttg ccaagtgaag
720
ttctgtacct tcaaaaacac ccatatcttc ctgcacaacg tgcccctgtg tgtcctggaa
780
aactgtgaat ttgtgggcag tgaaaacaac tctgtgactg ttgagggtca cccatctgcg
840
gataagaact gggcctacaa gtatctacta gggcttatca agtcctcacc cacttttctc
900
cccacagagg actctgactt tttaatgtcc ctggacctag agagccggga ccaggcctgg
960
agcccaaaga cctgtgacat tgttatcgag ggcagccaga gccctaccag cccagcttct
1020
agctccccaa agccaggctc caaggctggc tcacaggagg cagaggtggg tagtgatggt
1080
gaaagggtgg cccagacccc ggacagcagc gatggaggcc tgagtcccag cggtgaggat
1140
gaagatgagg accagctgat gtacagacta tcctaccaag tgcagggccc acgccctgta
1200
```

```
ttgggggggct catttctggg cccacctcta ccaggagcat ccattcagct gcccagctgc
1260
ctagtgctga actcactgca gcaggagctg cagaaggata aggaggccat ggcactggcc
1320
aactccgtgc agggctgcct catccgcaag tgcctcttcc gggacgggaa gggaggcgtc
1380
ttcgtctgct cccacggcag agccaagatg gaaggaaaca tcttccggaa cctgacttac
1440
gcagtgcggt gtatacataa tagcaagatc atcatgctca ggaacgacat ttaccgctgc
1500
cgagcgtcag gcatctttct tcgcttggag ggcggtggct tgattgccgg caacaacatt
1560
taccacaatg cagaggctgg tgtagacatc cggaaaaagt ccaacccact tcagattggt
1620
aaccctcgtg ccgaattctt ggcctcgagg gccaa
1655
```

<210> 4820
<211> 551
<212> PRT
<213> Homo sapiens

<400> 4820
```
Arg Pro Arg Pro Gly Leu Arg Gly Gly Arg Ala Pro Cys Glu Val Thr
1               5               10              15
Met Glu Ala Gly Gly Leu Pro Leu Glu Leu Trp Arg Met Ile Leu Ala
            20              25              30
Tyr Leu His Leu Pro Asp Leu Gly Arg Cys Ser Leu Val Cys Arg Ala
        35              40              45
Trp Tyr Glu Leu Ile Leu Ser Leu Asp Ser Thr Arg Trp Arg Gln Leu
    50              55              60
Cys Leu Gly Cys Thr Glu Cys Arg His Pro Asn Trp Pro Asn Gln Pro
65              70              75              80
Asp Val Glu Pro Glu Ser Trp Arg Glu Ala Phe Lys Gln His Tyr Leu
            85              90              95
Ala Ser Lys Thr Trp Thr Lys Asn Ala Leu Asp Leu Glu Ser Ser Ile
            100             105             110
Cys Phe Ser Leu Phe Arg Arg Arg Arg Glu Arg Arg Thr Leu Ser Val
            115             120             125
Gly Pro Gly Arg Glu Phe Asp Ser Leu Gly Ser Ala Leu Ala Met Ala
    130             135             140
Ser Leu Tyr Asp Arg Ile Val Leu Phe Pro Gly Val Tyr Glu Glu Gln
145             150             155             160
Gly Glu Ile Ile Leu Lys Val Pro Val Glu Ile Val Gly Gln Gly Lys
            165             170             175
Leu Gly Glu Val Ala Leu Leu Ala Ser Ile Asp Gln His Cys Ser Thr
            180             185             190
Thr Arg Leu Cys Asn Leu Val Phe Thr Pro Ala Trp Phe Ser Pro Ile
    195             200             205
Met Tyr Lys Thr Thr Ser Gly His Val Gln Phe Asp Asn Cys Asn Phe
    210             215             220
Glu Asn Gly His Ile Gln Val His Gly Pro Gly Thr Cys Gln Val Lys
225             230             235             240
Phe Cys Thr Phe Lys Asn Thr His Ile Phe Leu His Asn Val Pro Leu
```

```
                    245                       250                       255
       Cys Val Leu Glu Asn Cys Glu Phe Val Gly Ser Glu Asn Asn Ser Val
                        260                       265                       270
       Thr Val Glu Gly His Pro Ser Ala Asp Lys Asn Trp Ala Tyr Lys Tyr
                        275                       280                       285
       Leu Leu Gly Leu Ile Lys Ser Ser Pro Thr Phe Leu Pro Thr Glu Asp
                        290                       295                       300
       Ser Asp Phe Leu Met Ser Leu Asp Leu Glu Ser Arg Asp Gln Ala Trp
       305                       310                       315                       320
       Ser Pro Lys Thr Cys Asp Ile Val Ile Glu Gly Ser Gln Ser Pro Thr
                        325                       330                       335
       Ser Pro Ala Ser Ser Ser Pro Lys Pro Gly Ser Lys Ala Gly Ser Gln
                        340                       345                       350
       Glu Ala Glu Val Gly Ser Asp Gly Glu Arg Val Ala Gln Thr Pro Asp
                        355                       360                       365
       Ser Ser Asp Gly Gly Leu Ser Pro Ser Gly Glu Asp Glu Asp Glu Asp
                        370                       375                       380
       Gln Leu Met Tyr Arg Leu Ser Tyr Gln Val Gln Gly Pro Arg Pro Val
       385                       390                       395                       400
       Leu Gly Gly Ser Phe Leu Gly Pro Pro Leu Pro Gly Ala Ser Ile Gln
                        405                       410                       415
       Leu Pro Ser Cys Leu Val Leu Asn Ser Leu Gln Gln Glu Leu Gln Lys
                        420                       425                       430
       Asp Lys Glu Ala Met Ala Leu Ala Asn Ser Val Gln Gly Cys Leu Ile
                        435                       440                       445
       Arg Lys Cys Leu Phe Arg Asp Gly Lys Gly Gly Val Phe Val Cys Ser
                        450                       455                       460
       His Gly Arg Ala Lys Met Glu Gly Asn Ile Phe Arg Asn Leu Thr Tyr
       465                       470                       475                       480
       Ala Val Arg Cys Ile His Asn Ser Lys Ile Ile Met Leu Arg Asn Asp
                        485                       490                       495
       Ile Tyr Arg Cys Arg Ala Ser Gly Ile Phe Leu Arg Leu Glu Gly Gly
                        500                       505                       510
       Gly Leu Ile Ala Gly Asn Asn Ile Tyr His Asn Ala Glu Ala Gly Val
                        515                       520                       525
       Asp Ile Arg Lys Lys Ser Asn Pro Leu Gln Ile Gly Asn Pro Arg Ala
                        530                       535                       540
       Glu Phe Leu Ala Ser Arg Ala
       545                       550
```

<210> 4821
<211> 585
<212> DNA
<213> Homo sapiens

<400> 4821
ggccgcgtgg aggtgctgac cgatgccgga ggttgggtgc tgattgaccg gagcggccgt
60
cactttggta caatcctcaa ttacctgcgg gatgggtctg tgccactgcc ggagagtacg
120
agagaactgg gggagctgct gggcgaagca cgctactacc tggtgcaggg cctgattgag
180
gactgccagc tggcgctgca gcaaaaaagg gagacgctgt ccccgctgtg cctcatcccc
240

```
atggtgacat ctccccggga ggagcagcag ctcctggcca gcacctccaa gcccgtggtg
300
aagctcctgc acaaccgcag taacaacaag tactcctaca ccagcacttc agatgacaac
360
ctacttaaga acatcgagct gttcgacaag ctggccctgc gcttccacgg gcggctactc
420
ttcctcaagg atgtcctggg ggacgagatc tgctgctggt ctttctacgg gcagggccgc
480
aaaatcgccg aggtgtgctg cacctccatt gtctatgcta cggagaagaa gcagaccaag
540
gtcagagggg ctccagagcc tatgttgggg gctgggggtg gccac
585
```

```
<210> 4822
<211> 195
<212> PRT
<213> Homo sapiens

<400> 4822
Gly Arg Val Glu Val Leu Thr Asp Ala Gly Gly Trp Val Leu Ile Asp
1               5                   10                  15
Arg Ser Gly Arg His Phe Gly Thr Ile Leu Asn Tyr Leu Arg Asp Gly
            20                  25                  30
Ser Val Pro Leu Pro Glu Ser Thr Arg Glu Leu Gly Glu Leu Leu Gly
            35                  40                  45
Glu Ala Arg Tyr Tyr Leu Val Gln Gly Leu Ile Glu Asp Cys Gln Leu
        50                  55                  60
Ala Leu Gln Gln Lys Arg Glu Thr Leu Ser Pro Leu Cys Leu Ile Pro
65                  70                  75                  80
Met Val Thr Ser Pro Arg Glu Glu Gln Gln Leu Leu Ala Ser Thr Ser
                85                  90                  95
Lys Pro Val Val Lys Leu Leu His Asn Arg Ser Asn Asn Lys Tyr Ser
            100                 105                 110
Tyr Thr Ser Thr Ser Asp Asp Asn Leu Leu Lys Asn Ile Glu Leu Phe
            115                 120                 125
Asp Lys Leu Ala Leu Arg Phe His Gly Arg Leu Leu Phe Leu Lys Asp
        130                 135                 140
Val Leu Gly Asp Glu Ile Cys Cys Trp Ser Phe Tyr Gly Gln Gly Arg
145                 150                 155                 160
Lys Ile Ala Glu Val Cys Cys Thr Ser Ile Val Tyr Ala Thr Glu Lys
                165                 170                 175
Lys Gln Thr Lys Val Arg Gly Ala Pro Glu Pro Met Leu Gly Ala Gly
                180                 185                 190
Gly Gly His
        195
```

```
<210> 4823
<211> 1984
<212> DNA
<213> Homo sapiens

<400> 4823
nggtttttgt tttttgagcc gcaccccgcg gaggcgagga agcagcagcc gcagcacagc
60
```

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agcagctcca atggcgttaa aatggagaat gatgaatcag caaaagaaga gaaatctgac
120
ttaaaggaaa aatctacagg aagtaagaag gccaatagat ttcatcctta ttcaaaagac
180
aagaattcgg gcactggaga aaagaagggt ccaaatcgta acagagtttt cattagcaac
240
atcccatatg acatgaaatg gcaagctatt aaagatctaa tgagagagaa agttggtgag
300
gttacatacg tggagctctt taaggatgcg gaaggaaaat caaggggttg tggtgtggtt
360
gaattcaaag atgaagaatt tgtaaagaaa gccctagaaa ctatgaacaa atatgatctt
420
agtggaagac cccttaatat taaagaggat cctgatggag aaaatgctcg tagggcattg
480
cagcgaacag gaggatcatt tccaggagga cacgtccctg atatgggatc agggttgatg
540
aatttaccac cttccatact caataatcca acattcctc ctgaagtcat cagtaatttg
600
caggccggta gacttggttc cacaattttt gttgccaatc ttgacttcaa agttggttgg
660
aagaagctaa aggaagtgtt cagcatagct ggaactgtga agcgggcaga tattaaagaa
720
gacaaagatg gcaagagcag aggaatgggc actgtcactt ttgagcaagc aattgaagca
780
gttcaagcaa tttctatgtt caatgggcag tttttatttg atagacctat gcatgtgaaa
840
atggatgaca agtctgttcc tcatgaagag taccgttcac ctgatggtaa aacaccacaa
900
ttaccacgtg gtcttggagg cattgggatg ggacttggtc cgggtggaca gcctattagt
960
gccagccagt tgaacatagg tggagtaatg ggaaatttag gtccaggtgg tatgggaatg
1020
gatggtccag gttttggagg aatgaataga attggaggag aatagggtt tggtggtctg
1080
gaagcaatga atagcatggg aggatttgga ggagttggcc gaatgggaga gctgtaccgt
1140
ggtgcgatga ctagtagcat ggagcgagat ttcggacgtg gtgatattgg aataaatcga
1200
gcctttggcg attcctttgg tagacttggc agtgcaatga ttggagggat tacaggaaga
1260
ataggatctt ctaacatggg tccagtagga tctggaataa gtggtggaat gggtagcatg
1320
aacagtgtga ctggaggaat ggggatggga ctggaccgga tgagttccag ctttgataga
1380
atgggaccag gtataggagc tatactggaa aggagcatcg atatggatcg aggattttta
1440
tcgggtccaa tgggaagcgg aatgagagag agaataggct ccaaaggcaa ccagatattt
1500
gtcagaaatc tacctttga cttgacttgg cagaaactaa aagagaaatt cagtcagtgt
1560
ggtcatgtaa tgtttgcaga aataaaaatg gagaatggaa agtcaaaagg ctgtggaaca
1620
gtcagatttg actccccaga atcagctgaa aaagcctgca gaataatgaa tggcataaaa
1680
```

```
·atcagtggca gagaaattga tgttcgcttg gatcgtaatg cataatttca agccatggtt
1740
ggaacattcc tacatctgtt ttgctgaatc tcctagtaaa agtcattttt ttaaagtaat
1800
attgtatgct tacaaaagct gtaaaaatga acttttaaaa ctcccaccag cttttaacag
1860
gtataatggt aaaaatatac tgtaaatttt tggtaatctc aagtttgggt ttttaaagac
1920
agcaagtctg gtcattcagt ttaaatgaat gggtatactg gtttttaatg aaataagcca
1980
tttt
·1984


<210> 4824
<211> 547
<212> PRT
<213> Homo sapiens

<400> 4824
Met Glu Asn Asp Glu Ser Ala Lys Glu Glu Lys Ser Asp Leu Lys Glu
1               5                   10                  15
Lys Ser Thr Gly Ser Lys Lys Ala Asn Arg Phe His Pro Tyr Ser Lys
            20                  25                  30
Asp Lys Asn Ser Gly Thr Gly Glu Lys Lys Gly Pro Asn Arg Asn Arg
            35                  40                  45
Val Phe Ile Ser Asn Ile Pro Tyr Asp Met Lys Trp Gln Ala Ile Lys
    50                  55                  60
Asp Leu Met Arg Glu Lys Val Gly Glu Val Thr Tyr Val Glu Leu Phe
65                  70                  75                  80
Lys Asp Ala Glu Gly Lys Ser Arg Gly Cys Gly Val Val Glu Phe Lys
                85                  90                  95
Asp Glu Glu Phe Val Lys Lys Ala Leu Glu Thr Met Asn Lys Tyr Asp
            100                 105                 110
Leu Ser Gly Arg Pro Leu Asn Ile Lys Glu Asp Pro Asp Gly Glu Asn
            115                 120                 125
Ala Arg Arg Ala Leu Gln Arg Thr Gly Gly Ser Phe Pro Gly Gly His
    130                 135                 140
Val Pro Asp Met Gly Ser Gly Leu Met Asn Leu Pro Pro Ser Ile Leu
145                 150                 155                 160
Asn Asn Pro Asn Ile Pro Pro Glu Val Ile Ser Asn Leu Gln Ala Gly
                165                 170                 175
Arg Leu Gly Ser Thr Ile Phe Val Ala Asn Leu Asp Phe Lys Val Gly
            180                 185                 190
Trp Lys Lys Leu Lys Glu Val Phe Ser Ile Ala Gly Thr Val Lys Arg
            195                 200                 205
Ala Asp Ile Lys Glu Asp Lys Asp Gly Lys Ser Arg Gly Met Gly Thr
    210                 215                 220
Val Thr Phe Glu Gln Ala Ile Glu Ala Val Gln Ala Ile Ser Met Phe
225                 230                 235                 240
Asn Gly Gln Phe Leu Phe Asp Arg Pro Met His Val Lys Met Asp Asp
                245                 250                 255
Lys Ser Val Pro His Glu Glu Tyr Arg Ser Pro Asp Gly Lys Thr Pro
            260                 265                 270
Gln Leu Pro Arg Gly Leu Gly Gly Ile Gly Met Gly Leu Gly Pro Gly
```

```
                275                    280                    285
  Gly Gln Pro Ile Ser Ala Ser Gln Leu Asn Ile Gly Gly Val Met Gly
      290                    295                    300
  Asn Leu Gly Pro Gly Gly Met Gly Met Asp Gly Pro Gly Phe Gly Gly
  305                    310                    315                    320
  Met Asn Arg Ile Gly Gly Gly Ile Gly Phe Gly Gly Leu Glu Ala Met
                325                    330                    335
  Asn Ser Met Gly Gly Phe Gly Gly Val Gly Arg Met Gly Glu Leu Tyr
                340                    345                    350
  Arg Gly Ala Met Thr Ser Ser Met Glu Arg Asp Phe Gly Arg Gly Asp
                355                    360                    365
  Ile Gly Ile Asn Arg Ala Phe Gly Asp Ser Phe Gly Arg Leu Gly Ser
      370                    375                    380
  Ala Met Ile Gly Gly Ile Thr Gly Arg Ile Gly Ser Ser Asn Met Gly
  385                    390                    395                    400
  Pro Val Gly Ser Gly Ile Ser Gly Gly Met Gly Ser Met Asn Ser Val
                405                    410                    415
  Thr Gly Gly Met Gly Met Gly Leu Asp Arg Met Ser Ser Ser Phe Asp
                420                    425                    430
  Arg Met Gly Pro Gly Ile Gly Ala Ile Leu Glu Arg Ser Ile Asp Met
                435                    440                    445
  Asp Arg Gly Phe Leu Ser Gly Pro Met Gly Ser Gly Met Arg Glu Arg
      450                    455                    460
  Ile Gly Ser Lys Gly Asn Gln Ile Phe Val Arg Asn Leu Pro Phe Asp
  465                    470                    475                    480
  Leu Thr Trp Gln Lys Leu Lys Glu Lys Phe Ser Gln Cys Gly His Val
                485                    490                    495
  Met Phe Ala Glu Ile Lys Met Glu Asn Gly Lys Ser Lys Gly Cys Gly
                500                    505                    510
  Thr Val Arg Phe Asp Ser Pro Glu Ser Ala Glu Lys Ala Cys Arg Ile
      515                    520                    525
  Met Asn Gly Ile Lys Ile Ser Gly Arg Glu Ile Asp Val Arg Leu Asp
      530                    535                    540
  Arg Asn Ala
  545
```

```
<210> 4825
<211> 2380
<212> DNA
<213> Homo sapiens

<400> 4825
nnagagaatt cggcacgggt ggagaagcaa ctgcagcaag ctctggagga gggtaagcag
60
ggccggcggg gcctggggtc gtcgcgacca ggcagtgcag accggcttcg tcagcyccat
120
ccggcccctg gggcbkcagc tgggcgcccg gccggccgct gtctgcagcc ctttggagcg
180
cgtkctgggc tcgcccgckc gctccccggc cggcccctc gcgccctccg cggccagcct
240
ctcgtcgtcc tccacctcca cctccaccac ctattcctcg tcggcccgct tcatgcccgg
300
caccatctgg tcgttctcgc acgnccgccg gctcgggccg ggactggagc ccactctggt
360
```

```
gcaagggcct gggttgtmgt gggtgcaccc ggatggggtg ggcgtccaga tcgacaccat
420
cacgcccgag atccgcgctc tctacaacgt gctggccaaa gtgaagcggg agcgggacga
480
gtacaagcgg aggtgggaag aggagtacac ggtgcggatc cagctgcaag accgtgtaaa
540
tgagctccag gaggaagccc aggaggctga tgcctgccag gaggagctgg cactgaaggt
600
ggaacagttg aaggctgagc tggtggtctt caaggggctc atgagtaaca acctgtcgga
660
gctggacacc aagatccagg agaaagccat gaaggtggat atggacatct gccgccgcat
720
cgacatcacc gccaagctct gcgatgtggc tcagcagcgc aactgcgagg acatgatcca
780
gatgttccag aagaagctgg tcccatccat gggggggcgg aagcgggagc gcaaggctgc
840
cgtcgaggag gacacctccc tgtcggagag tgaggggccc gccagcccga tggggatgag
900
gaggagagca cagccctcag catcaacgag gagatgcagc gcatgctcaa ccagctgagg
960
gagtatgatt ttgaggacga ctgtgacagc ctgacttggg aggagactga ggagaccctg
1020
ctgctttggg aggatttctc aggctatgcc atggcagctg cagaggccca gggagagcag
1080
gaagatagcc tggagaaggt gattaaagat acggagtccc tgttcaaaac ccgggagaag
1140
gagtatcagg agaccattga ccagatagag ctggagttgg ccacggccaa gaacgacatg
1200
aaccggcacc tgcacgagta catggagatg tgcagcatga agcgcggcct ggacgtgcag
1260
atggagacct gccgccggct catcacccag tctggagacc gaaagtctcc tgctttcact
1320
gcggtcccgc ttagcgaccc gccgccgccg ccaagcgagg ctgaggactc cgatcgcgat
1380
gtctcatctg acagctccat gagatagaga cctgcctccc ccttgcaccc gaggccctcg
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1560
cttggcttct ccagggctct ggggtgtctg agctaggct tggccctacc attctggggc
1620
catttccacc acagttgggg ctctcctgcc ttcacgcgtg ggtgtctgct acttccccat
1680
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1980
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4003

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<212> PRT
<213> Homo sapiens

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            35   40   45
Ser Met Lys Arg Gly Leu Asp Val Gln Met Glu Thr Cys Arg Arg Leu
        50   55   60
Ile Thr Gln Ser Gly Asp Arg Lys Ser Pro Ala Phe Thr Ala Val Pro
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Asp Val Ser Ser Asp Ser Ser Met Arg
                100   105

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<212> DNA
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180

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240

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300

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360

4004

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1980
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<211> 1322
<212> PRT
<213> Homo sapiens
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Asp Pro Leu Glu Leu Gly Pro Cys Gly Asp Gly His Gly Thr Arg Ile
        35                  40                  45
Met Glu Asp Cys Leu Leu Gly Gly Thr Arg Val Ser Leu Pro Glu Asp
    50                  55                  60
Leu Leu Glu Asp Pro Glu Ile Phe Phe Asp Val Val Ser Leu Ser Thr
65                  70                  75                  80
Trp Gln Glu Val Leu Ser Asp Ser Gln Arg Glu His Leu Gln Gln Phe
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                       85                    90                    95
Leu Pro Gln Phe Pro Glu Asp Ser Ala Glu Gln Gln Asn Glu Leu Ile
            100                   105                   110
Leu Ala Leu Phe Ser Gly Glu Asn Phe Arg Phe Gly Asn Pro Leu His
        115                   120                   125
Ile Ala Gln Lys Leu Phe Arg Asp Gly His Phe Asn Pro Glu Val Val
    130                   135                   140
Lys Tyr Arg Gln Leu Cys Phe Lys Ser Gln Tyr Lys Arg Tyr Leu Asn
145                   150                   155                   160
Ser Gln Gln Gln Tyr Phe His Arg Leu Leu Lys Gln Ile Leu Ala Ser
                  165                   170                   175
Arg Ser Asp Leu Leu Glu Met Ala Arg Arg Ser Gly Pro Ala Leu Pro
            180                   185                   190
Phe Arg Gln Lys Arg Pro Ser Pro Ser Arg Thr Pro Glu Glu Arg Glu
        195                   200                   205
Trp Arg Thr Gln Gln Arg Tyr Leu Lys Val Leu Arg Glu Val Lys Glu
    210                   215                   220
Glu Cys Gly Asp Thr Ala Leu Ser Ser Asp Glu Glu Asp Leu Ser Ser
225                   230                   235                   240
Trp Leu Pro Ser Ser Pro Ala Arg Ser Pro Ser Pro Ala Val Pro Leu
                  245                   250                   255
Arg Val Val Pro Thr Leu Ser Thr Thr Asp Met Lys Thr Ala Asp Lys
            260                   265                   270
Val Glu Leu Gly Asp Ser Asp Leu Lys Ile Met Leu Lys Lys His His
            275                   280                   285
Glu Lys Arg Lys His Gln Pro Asp His Pro Asp Leu Leu Thr Gly Asp
    290                   295                   300
Leu Thr Leu Asn Asp Ile Met Thr Arg Val Asn Ala Gly Arg Lys Gly
305                   310                   315                   320
Ser Leu Ala Ala Leu Tyr Asp Leu Ala Val Leu Lys Lys Lys Val Lys
                  325                   330                   335
Glu Lys Glu Glu Lys Lys Lys Lys Lys Ile Lys Thr Ile Lys Ser Glu
            340                   345                   350
Ala Glu Asp Leu Ala Glu Pro Leu Ser Ser Thr Glu Gly Val Ala Pro
    355                   360                   365
Leu Ser Gln Ala Pro Ser Pro Leu Ala Ile Pro Ala Ile Lys Glu Glu
    370                   375                   380
Pro Leu Glu Asp Leu Lys Pro Cys Leu Gly Ile Asn Glu Ile Ser Ser
385                   390                   395                   400
Ser Phe Phe Ser Leu Leu Leu Glu Ile Leu Leu Leu Glu Ser Gln Ala
                  405                   410                   415
Ser Leu Pro Met Leu Glu Glu Arg Val Leu Asp Trp Gln Ser Ser Pro
            420                   425                   430
Ala Ser Ser Leu Asn Ser Trp Phe Ser Ala Ala Pro Asn Trp Ala Glu
            435                   440                   445
Leu Val Leu Pro Ala Leu Gln Tyr Leu Ala Gly Glu Ser Arg Ala Val
    450                   455                   460
Pro Ser Ser Phe Ser Pro Phe Val Glu Phe Lys Glu Lys Thr Gln Gln
465                   470                   475                   480
Trp Lys Leu Leu Gly Gln Ser Gln Asp Asn Glu Lys Glu Leu Ala Ala
                  485                   490                   495
Leu Phe Gln Leu Trp Leu Glu Thr Lys Asp Gln Ala Phe Cys Lys Gln
                  500                   505                   510
Glu Asn Glu Asp Ser Ser Asp Ala Thr Thr Pro Val Pro Arg Val Arg
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4009

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Gln Glu Gln Glu Arg Tyr Arg Tyr Ser Gln Pro His Lys Ala Phe Thr
545                    550                    555                    560
Phe Arg Met His Gly Phe Glu Ser Val Val Gly Pro Val Lys Gly Val
                565                    570                    575
Phe Asp Lys Glu Thr Ser Leu Asn Lys Ala Arg Glu His Ser Leu Leu
            580                    585                    590
Arg Ser Asp Arg Pro Ala Tyr Val Thr Ile Leu Ser Leu Val Arg Asp
        595                    600                    605
Ala Ala Ala Arg Leu Pro Asn Gly Glu Gly Thr Arg Ala Glu Ile Cys
    610                    615                    620
Glu Leu Leu Lys Asp Ser Gln Phe Leu Ala Pro Asp Val Thr Ser Thr
625                    630                    635                    640
Gln Val Asn Thr Val Val Ser Gly Ala Leu Asp Arg Leu His Tyr Glu
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Lys Asp Pro Cys Val Lys Tyr Asp Ile Gly Arg Lys Leu Trp Ile Tyr
            660                    665                    670
Leu His Arg Asp Arg Ser Glu Glu Glu Phe Glu Arg Ile His Gln Ala
        675                    680                    685
Gln Ala Ala Ala Ala Lys Ala Arg Lys Ala Leu Gln Gln Lys Pro Lys
    690                    695                    700
Pro Pro Ser Lys Val Lys Ser Ser Ser Lys Glu Ser Ser Ile Lys Val
705                    710                    715                    720
Leu Ser Ser Gly Pro Ser Glu Gln Ser Gln Met Ser Leu Ser Asp Ser
                725                    730                    735
Ser Met Pro Pro Thr Pro Val Thr Pro Val Thr Pro Thr Thr Pro Ala
            740                    745                    750
Leu Pro Ala Ile Pro Ile Ser Pro Pro Pro Val Ser Ala Val Asn Lys
        755                    760                    765
Ser Gly Pro Ser Thr Val Ser Glu Pro Ala Lys Ser Ser Ser Gly Val
    770                    775                    780
Leu Leu Val Ser Ser Pro Thr Met Pro His Leu Gly Thr Met Leu Ser
785                    790                    795                    800
Pro Ala Ser Ser Gln Thr Ala Pro Ser Ser Gln Ala Ala Ala Arg Val
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Val Ser His Ser Gly Ser Ala Gly Leu Ser Gln Val Arg Val Val Ala
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Gln Pro Ser Leu Pro Ala Val Pro Gln Gln Ser Gly Gly Pro Ala Gln
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Thr Leu Pro Gln Met Pro Ala Gly Pro Gln Ile Arg Val Pro Ala Thr
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Ala Thr Gln Thr Lys Val Val Pro Gln Thr Val Met Ala Thr Val Pro
865                    870                    875                    880
Val Lys Ala Gln Thr Thr Ala Ala Thr Val Gln Arg Pro Gly Pro Gly
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Gln Thr Gly Leu Thr Val Thr Ser Leu Pro Ala Thr Ala Ser Pro Val
            900                    905                    910
Ser Lys Pro Ala Thr Ser Ser Pro Gly Thr Ser Ala Pro Ser Ala Ser
        915                    920                    925
Thr Ala Ala Val Ile Gln Asn Val Thr Gly Gln Asn Ile Ile Lys Gln
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Val Ala Ile Thr Gly Gln Leu Gly Val Lys Pro Gln Thr Gly Asn Ser
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Arg Leu Pro Pro Ser Ser Ile Thr Thr Asp Ala Lys Gly Gln Thr Val
                980                    985                    990
Leu Arg Ile Thr Pro Asp Met Met Ala Thr Leu Ala Lys Ser Gln Val
            995                    1000                   1005
Thr Thr Val Lys Leu Thr Gln Asp Leu Phe Gly Thr Gly Gly Asn Thr
        1010                   1015                   1020
Thr Gly Lys Gly Ile Ser Ala Thr Leu His Val Thr Ser Asn Pro Val
    1025                   1030                   1035                   1040
His Ala Ala Asp Ser Pro Ala Lys Ala Ser Ser Ala Ser Ala Pro Ser
                1045                   1050                   1055
Ser Thr Pro Thr Gly Thr Thr Val Val Lys Val Thr Pro Asp Leu Lys
            1060                   1065                   1070
Pro Thr Glu Ala Ser Ser Ser Ala Phe Arg Leu Met Pro Ala Leu Gly
            1075                   1080                   1085
Val Ser Val Ala Asp Gln Lys Gly Lys Ser Thr Val Ala Ser Ser Glu
        1090                   1095                   1100
Ala Lys Pro Ala Ala Thr Ile Arg Ile Val Gln Gly Leu Gly Val Met
    1105                   1110                   1115                   1120
Pro Pro Lys Ala Gly Gln Thr Ile Thr Val Ala Thr His Ala Lys Gln
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Gly Ala Ser Val Ala Ser Gly Ser Gly Thr Val His Thr Ser Ala Val
            1140                   1145                   1150
Ser Leu Pro Ser Met Asn Ala Ala Val Ser Lys Thr Val Ala Val Ala
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Ser Gly Ala Ala Ser Thr Pro Ile Ser Ile Ser Thr Gly Ala Pro Thr
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Val Arg Gln Val Pro Val Ser Thr Thr Val Val Ser Thr Ser Gln Ala
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Gly Lys Leu Pro Thr Arg Ile Thr Val Pro Leu Ser Val Ile Ser Gln
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Pro Met Lys Gly Lys Ser Val Val Thr Ala Pro Ile Ile Lys Gly Asn
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Leu Thr Ala Gln Gln Leu Gln Gln Leu Gln Gln Gln Gly Gln Ala Thr
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Gln Val Arg Ile Gln Thr Val Pro Ala Ser Xaa Leu Gln Gln Gly Thr
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<210> 4829
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<212> DNA
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<400> 4829

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agctttgagc agttcattat taattattgt aacgaaaagc tgcaacaaat cttcattgaa
1320
cttactctta aagaagagca ggaggagtat atacgggagg atatagaatg gactcacatt
1380
gactacttca ataatgctat catttgtgac ctaatagaaa ataacacaaa tggaatcctg
1440
gccatgttgg atgaagagtg cctcagacct ggcacagtca ctgatgagac cttcttagaa
1500
aagctgaacc aagtatgtgc cacccaccag cattttgaaa gcaggatgag caagtgctct
1560
cggttcctca atgacacgtc tctgcctcac agctgcttca ggatc
1605
```

4012

```
<210> 4830
<211> 512
<212> PRT
<213> Homo sapiens

<400> 4830
Met Ala Lys Met Glu Val Lys Thr Ser Leu Leu Asp Asn Met Ile Gly
 1               5                   10                  15
Val Gly Asp Met Val Leu Leu Glu Pro Leu Asn Glu Glu Thr Phe Ile
                20                  25                  30
Asn Asn Leu Lys Lys Arg Phe Asp His Ser Glu Ile Tyr Thr Tyr Ile
            35                  40                  45
Gly Ser Val Val Ile Ser Val Asn Pro Tyr Arg Ser Leu Pro Ile Tyr
        50                  55                  60
Ser Pro Glu Lys Val Glu Glu Tyr Arg Asn Arg Asn Phe Tyr Glu Leu
65                  70                  75                  80
Ser Pro His Ile Phe Ala Leu Ser Asp Glu Ala Tyr Arg Ser Leu Arg
                85                  90                  95
Asp Gln Asp Lys Asp Gln Cys Ile Leu Ile Thr Gly Glu Ser Gly Ala
                100                 105                 110
Gly Lys Thr Glu Ala Ser Lys Leu Val Met Ser Tyr Val Ala Ala Val
            115                 120                 125
Cys Gly Lys Gly Ala Glu Val Asn Gln Val Lys Glu Gln Leu Leu Gln
        130                 135                 140
Ser Asn Pro Val Leu Glu Ala Phe Gly Asn Ala Lys Thr Val Arg Asn
145                 150                 155                 160
Asp Asn Ser Ser Arg Phe Gly Lys Tyr Met Asp Ile Glu Phe Asp Phe
                165                 170                 175
Lys Gly Asp Pro Leu Gly Gly Val Ile Ser Asn Tyr Leu Leu Glu Lys
                180                 185                 190
Ser Arg Val Val Lys Gln Pro Arg Gly Glu Arg Asn Phe His Val Phe
            195                 200                 205
Tyr Gln Leu Leu Ser Gly Ala Ser Glu Glu Leu Leu Asn Lys Leu Lys
        210                 215                 220
Leu Glu Arg Asp Phe Ser Arg Tyr Asn Tyr Leu Ser Leu Asp Ser Ala
225                 230                 235                 240
Lys Val Asn Gly Val Asp Asp Ala Ala Asn Phe Arg Thr Val Arg Asn
                245                 250                 255
Ala Met Gln Ile Val Gly Phe Met Asp His Glu Ala Glu Ser Val Leu
                260                 265                 270
Ala Val Val Ala Ala Val Leu Lys Leu Gly Asn Ile Glu Phe Lys Pro
            275                 280                 285
Glu Ser Arg Val Asn Gly Leu Asp Glu Ser Lys Ile Lys Asp Lys Asn
            290                 295                 300
Glu Leu Lys Glu Ile Cys Glu Leu Thr Gly Ile Asp Gln Ser Val Leu
305                 310                 315                 320
Glu Arg Ala Phe Ser Phe Arg Thr Val Glu Ala Lys Gln Glu Lys Val
                325                 330                 335
Ser Thr Thr Leu Asn Val Ala Gln Ala Tyr Tyr Ala Arg Asp Ala Leu
            340                 345                 350
Ala Lys Asn Leu Tyr Ser Arg Leu Phe Ser Trp Leu Val Asn Arg Ile
            355                 360                 365
Asn Glu Ser Ile Lys Ala Gln Thr Lys Val Arg Lys Lys Val Met Gly
```

```
        370                 375                 380
Val Leu Asp Ile Tyr Gly Phe Glu Ile Phe Glu Asp Asn Ser Phe Glu
385                 390                 395                 400
Gln Phe Ile Ile Asn Tyr Cys Asn Glu Lys Leu Gln Gln Ile Phe Ile
                405                 410                 415
Glu Leu Thr Leu Lys Glu Glu Gln Glu Glu Tyr Ile Arg Glu Asp Ile
                420                 425                 430
Glu Trp Thr His Ile Asp Tyr Phe Asn Asn Ala Ile Ile Cys Asp Leu
            435                 440                 445
Ile Glu Asn Asn Thr Asn Gly Ile Leu Ala Met Leu Asp Glu Glu Cys
        450                 455                 460
Leu Arg Pro Gly Thr Val Thr Asp Glu Thr Phe Leu Glu Lys Leu Asn
465                 470                 475                 480
Gln Val Cys Ala Thr His Gln His Phe Glu Ser Arg Met Ser Lys Cys
                485                 490                 495
Ser Arg Phe Leu Asn Asp Thr Ser Leu Pro His Ser Cys Phe Arg Ile
                500                 505                 510
```

<210> 4831
<211> 578
<212> DNA
<213> Homo sapiens

<400> 4831

```
cggacggtgg cccctcaaagg cccagtcacc aatgccgcca tcctgctggc gcccgtcagc
60
atgctgagct cagacttcag gcccagcctg ccgctgcccc acttcaacaa gcacctgctg
120
ggcgccgagc acggggacga gccgcgccac gggggcctca ctctgcgcct gggcctccac
180
cagcagagcg tgctcggcgg ccaggaccag ctgcgcgtcc gtgtgacgga gctggaggac
240
gaggtgcgca acctgcgcaa gatcaatcgg gacctgttcg acttctccac gcgcttcatc
300
acgcggccgg ccaagtgagg cccggagacc ccggcccgag gcgcccaggc ctgagcccca
360
tgcctcccag caaccagggc ccgcgggtgt ggcccccacc agcccaggcc tggactctcc
420
tcagttctgt gtcgtgttcg ggttttttcct ctgtgactgg gccgtcttgg tgtctcgtgg
480
cacgcgtcac agtggtgcta gtctgttttt aacaaaagag gatgaaaagc caaaaaaaaa
540
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa
578
```

<210> 4832
<211> 105
<212> PRT
<213> Homo sapiens

<400> 4832

```
Arg Thr Val Ala Leu Lys Gly Pro Val Thr Asn Ala Ala Ile Leu Leu
 1               5                  10                  15
Ala Pro Val Ser Met Leu Ser Ser Asp Phe Arg Pro Ser Leu Pro Leu
```

4014

```
              20                    25                   30
Pro His Phe Asn Lys His Leu Leu Gly Ala Glu His Gly Asp Glu Pro
         35                   40                   45
Arg His Gly Gly Leu Thr Leu Arg Leu Gly Leu His Gln Gln Ser Val
     50                   55                   60
Leu Gly Gly Gln Asp Gln Leu Arg Val Arg Val Thr Glu Leu Glu Asp
65                   70                   75                   80
Glu Val Arg Asn Leu Arg Lys Ile Asn Arg Asp Leu Phe Asp Phe Ser
                 85                   90                   95
Thr Arg Phe Ile Thr Arg Pro Ala Lys
                100                  105
```

```
<210> 4833
<211> 872
<212> DNA
<213> Homo sapiens

<400> 4833
nnctggacag aattttaaa agcaatgaag ccagttcctt ggatatatcc acgggctttg
60
ctttgagaag gaactgagta ggcagtgaga agagtcgagt gaagcctggc ccgtgagtgc
120
ctcaacaact gagatgaacg tcgactcgct tgcaggcaag ttgtcactca gcagcgatct
180
gaactatatc ctgggttcca gaaaaggcag aggttcttac cgaaagcagg ggaggaagcc
240
gcagcccaag gaggtcgtca cttgccggga aggtggctcg ggccaggctg cactcaaaac
300
ccgtgctctg tccacactgc tacggggcca gagccaagga agcttccact tcttccccca
360
gacagcccca acagcggcta ccccaaggag ccagcagcct tgtgtcctgg gatccccagc
420
ccctgcagaa tgacccacca ggatctgagc atcacagcca aactcatcaa tggaggtgta
480
gcagggctcg tggggtgac ctgcgtgttc cccatcgact tggccaagac tcgcctgcag
540
aaccagcatg ggaaagccat gtacaaagga atgatcgact gcctgatgaa gacggctcgg
600
gcggagggct tcttcggcat gtaccgaggg gctgcagtga acctcactct ggtcactcca
660
gagaaggcca tcaagctggc ggccaacgac ttttttccggc ggctgctcat ggaagatggg
720
atgcagcgga acctgaagat ggagatgctt gccgggtgtg gggctgggat gtgccaggtc
780
gtggtgacct gtcccatgga aatgctcaag attcagctgc aggcatgctg gacgcctggc
840
cgtccatcat cagggctcgg cctcagcacc ct
872

<210> 4834
<211> 147
<212> PRT
<213> Homo sapiens
```

<400> 4834
Met Thr His Gln Asp Leu Ser Ile Thr Ala Lys Leu Ile Asn Gly Gly
 1   5   10   15
Val Ala Gly Leu Val Gly Val Thr Cys Val Phe Pro Ile Asp Leu Ala
            20   25   30
Lys Thr Arg Leu Gln Asn Gln His Gly Lys Ala Met Tyr Lys Gly Met
        35   40   45
Ile Asp Cys Leu Met Lys Thr Ala Arg Ala Glu Gly Phe Phe Gly Met
    50   55   60
Tyr Arg Gly Ala Ala Val Asn Leu Thr Leu Val Thr Pro Glu Lys Ala
65   70   75   80
Ile Lys Leu Ala Ala Asn Asp Phe Phe Arg Arg Leu Leu Met Glu Asp
                85   90   95
Gly Met Gln Arg Asn Leu Lys Met Glu Met Leu Ala Gly Cys Gly Ala
            100   105   110
Gly Met Cys Gln Val Val Val Thr Cys Pro Met Glu Met Leu Lys Ile
        115   120   125
Gln Leu Gln Ala Cys Trp Thr Pro Gly Arg Pro Ser Ser Gly Leu Gly
    130   135   140
Leu Ser Thr
145

<210> 4835
<211> 1846
<212> DNA
<213> Homo sapiens

<400> 4835
nctcatttcc gaagtgccct gacagcccac cctgtgcgtg accctgtgca catgtaccag
60
ctgcacaaag ctttcgcccg agctgaactg gaacgcacgt accaggagat ccaggagtta
120
cagtgggaga tccagaatac cagccatctg gccgttgatg gggaccgggc agctgcttgg
180
cccgtgggta ttccagcacc atcccgcccg gcctcccgct ttgaggtgct cgcctgggac
240
tacttcacgg agcagcacgc tttctcctgc gccgatggct caccccgctg cccactgcgt
300
ggggctgacc gggctgatgt ggccgatgtt ctggggacag ctctagagga gctgaaccgc
360
cgctaccacc cggccttgcg gctccagaag cagcagctgg tgaatggcta ccgacgcttt
420
gatccggccc ggggtatgga atacacgctg gacttgcagc tggaggcact gacccccag
480
ggaggccgcc ggcccctcac tcgccgartg cagctgctcc ggccgctgag ccgcgtggag
540
atcttgcctg tgccctatgt cactgaggcc tcacgtctca ctgtgctgct gcctctagct
600
gcggctgagc gtgacctggc ccctggcttc ttggaggcct ttgccactgc agcactggag
660
cctggtgatg ctgcggcagc cctgaccctg ctgctactgt atgagccgcg ccaggcccag
720
cgcgtggccc atgcagatgt cttcgcacct gtcaaggccc acgtggcaga gctggagcgg
780

```
cgtttccccg gtgcccgggt gccatggctc agtgtgcaga cagccgcacc ctcaccactg
840
cgcctcatgg atctactctc caagaagcac ccgctggaca cactgttcct gctggccggg
900
ccagacacgg tgctcacgcc tgacttcctg aaccgctgcc gcatgcatgc catctccggc
960
tggcaggcct tctttcccat gcatttccaa gccttccacc cagctgtggc cccaccacaa
1020
gggcctgggc ccccagagct ggggccgtga cactggccgc tttgatcgcc aggcagccag
1080
cgaggcctgc ttctacaact ccgactacgt ggcagcccgt gggcgcctgg gcgcagctca
1140
gaacaagaag aggagctgct ggagagcctg gatgtgtacg agctgttcct ccacttctcc
1200
agtctgcatg tgctgcgggc ggtggagcgg cgctgctgca gccgctaccg ggcccagacg
1260
tgcagcgcga ggctcagtga ggacctgtac caccgctgcc tccagagcgt gcttgagggc
1320
ctcggctccc gaacccagct ggccatgcta ctctttgaac aggagcaggg caacagcacc
1380
tgaccccacc ctgtccccgt gggcccgtgg cattggccac accccacccc acttctcccc
1440
caaaaccaga gccacctgcc agcctcgctg ggcagggctg gccgtagcca gaccccaagc
1500
tggcccactg gtcccctctc tggctctgtg ggtccctggg ctctggacaa gcactggggg
1560
acgtgccccc agagccaccc acttctcatc ccaaacccag tttccctgcc ccctgacgct
1620
gctgattcgg gctgtggcct ccacgtattt atgcagtaca gtctgcctga cgccagccct
1680
gcctctgggc cctgggggct gggctgtaga agagttgttg gggaaggagg gagctgagga
1740
gggggcatct cccaacttct ccctttggga ccctgccgaa gctccctgcc tttaataaac
1800
tggccaagtg tggaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa
1846
```

<210> 4836
<211> 349
<212> PRT
<213> Homo sapiens

<400> 4836

```
Xaa His Phe Arg Ser Ala Leu Thr Ala His Pro Val Arg Asp Pro Val
1               5                   10                  15
His Met Tyr Gln Leu His Lys Ala Phe Ala Arg Ala Glu Leu Glu Arg
            20                  25                  30
Thr Tyr Gln Glu Ile Gln Glu Leu Gln Trp Glu Ile Gln Asn Thr Ser
        35                  40                  45
His Leu Ala Val Asp Gly Asp Arg Ala Ala Ala Trp Pro Val Gly Ile
    50                  55                  60
Pro Ala Pro Ser Arg Pro Ala Ser Arg Phe Glu Val Leu Arg Trp Asp
65              70                  75                  80
Tyr Phe Thr Glu Gln His Ala Phe Ser Cys Ala Asp Gly Ser Pro Arg
```

```
                    85                    90                    95
Cys Pro Leu Arg Gly Ala Asp Arg Ala Asp Val Ala Asp Val Leu Gly
                100                   105                   110
Thr Ala Leu Glu Glu Leu Asn Arg Arg Tyr His Pro Ala Leu Arg Leu
            115                   120                   125
Gln Lys Gln Gln Leu Val Asn Gly Tyr Arg Arg Phe Asp Pro Ala Arg
        130                   135                   140
Gly Met Glu Tyr Thr Leu Asp Leu Gln Leu Glu Ala Leu Thr Pro Gln
145                   150                   155                   160
Gly Gly Arg Arg Pro Leu Thr Arg Arg Val Gln Leu Leu Arg Pro Leu
                165                   170                   175
Ser Arg Val Glu Ile Leu Pro Val Pro Tyr Val Thr Glu Ala Ser Arg
            180                   185                   190
Leu Thr Val Leu Leu Pro Leu Ala Ala Ala Glu Arg Asp Leu Ala Pro
        195                   200                   205
Gly Phe Leu Glu Ala Phe Ala Thr Ala Ala Leu Glu Pro Gly Asp Ala
    210                   215                   220
Ala Ala Ala Leu Thr Leu Leu Leu Leu Tyr Glu Pro Arg Gln Ala Gln
225                   230                   235                   240
Arg Val Ala His Ala Asp Val Phe Ala Pro Val Lys Ala His Val Ala
                245                   250                   255
Glu Leu Glu Arg Arg Phe Pro Gly Ala Arg Val Pro Trp Leu Ser Val
                260                   265                   270
Gln Thr Ala Ala Pro Ser Pro Leu Arg Leu Met Asp Leu Leu Ser Lys
            275                   280                   285
Lys His Pro Leu Asp Thr Leu Phe Leu Leu Ala Gly Pro Asp Thr Val
        290                   295                   300
Leu Thr Pro Asp Phe Leu Asn Arg Cys Arg Met His Ala Ile Ser Gly
305                   310                   315.                  320
Trp Gln Ala Phe Phe Pro Met His Phe Gln Ala Phe His Pro Ala Val
                325                   330                   335
Ala Pro Pro Gln Gly Pro Gly Pro Pro Glu Leu Gly Pro
                340                   345
```

<210> 4837
<211> 906
<212> DNA
<213> Homo sapiens

<400> 4837

naggggggagg aggaggaggt ggtggcagcc tttgggaaga aggagtccca ggaggaagag
60
gaggaagaag acagtgacga aggggaaaga acaattgaaa ctgcaaaagg gattaatgga
120
actgtaaatt atgatagtgt caattctgac aactctaagc caaagatatt taaaagtcaa
180
atagagaaca taaatttgac caatggcagc aatgggagga acacagagtc cccagctgcc
240
attcaccctt gtggaaatcc tacagtgatt gaggacgctt tggacaagat taaaagcaat
300
gaccctgaca ccacagaagt caatttgaac aacattgaga acatcacaac acagaccctt
360
acccgctttg ctgaagccct caaggacaac actgtggtga agacgttcag tctggccaac
420

4018

acgcatgccg acgacagtgc agccatggcc attgcagaga tgctcaaagt caatgagcac
480
atcaccaacg taaacgtcga gtccaacttc ataacgggaa aggggatcct ggccatcatg
540
agagctctcc agcacaacac ggtgctcacg gagctgcgtt tccataacca gaggcacatc
600
atgggcagcc aggtggaaat ggagattgtc aagctgctga aggagaacac gacgctgctg
660
aggctgggat accattttga actcccagga ccaagaatga gcatgacgag cattttgaca
720
agaaatatgg ataaacagag gcaaaaacgt ttgcaggagc aaaaacagca ggagggatac
780
gatggaggac ccaatcttag gaccaaagtc tggcaaagag gaacacctag cccttcccct
840
tatgtatctc ccaggcactc accgtggtca tccccaaaac tcccctacgg agagacgaca
900
acgcgt
906

<210> 4838
<211> 302
<212> PRT
<213> Homo sapiens

<400> 4838
Xaa Gly Glu Glu Glu Glu Val Val Ala Ala Phe Gly Lys Lys Glu Ser
1   5   10   15
Gln Glu Glu Glu Glu Glu Glu Asp Ser Asp Glu Gly Glu Arg Thr Ile
            20   25   30
Glu Thr Ala Lys Gly Ile Asn Gly Thr Val Asn Tyr Asp Ser Val Asn
            35   40   45
Ser Asp Asn Ser Lys Pro Lys Ile Phe Lys Ser Gln Ile Glu Asn Ile
        50   55   60
Asn Leu Thr Asn Gly Ser Asn Gly Arg Asn Thr Glu Ser Pro Ala Ala
65   70   75   80
Ile His Pro Cys Gly Asn Pro Thr Val Ile Glu Asp Ala Leu Asp Lys
                85   90   95
Ile Lys Ser Asn Asp Pro Asp Thr Thr Glu Val Asn Leu Asn Asn Ile
            100   105   110
Glu Asn Ile Thr Thr Gln Thr Leu Thr Arg Phe Ala Glu Ala Leu Lys
            115   120   125
Asp Asn Thr Val Val Lys Thr Phe Ser Leu Ala Asn Thr His Ala Asp
        130   135   140
Asp Ser Ala Ala Met Ala Ile Ala Glu Met Leu Lys Val Asn Glu His
145   150   155   160
Ile Thr Asn Val Asn Val Glu Ser Asn Phe Ile Thr Gly Lys Gly Ile
                165   170   175
Leu Ala Ile Met Arg Ala Leu Gln His Asn Thr Val Leu Thr Glu Leu
            180   185   190
Arg Phe His Asn Gln Arg His Ile Met Gly Ser Gln Val Glu Met Glu
            195   200   205
Ile Val Lys Leu Leu Lys Glu Asn Thr Thr Leu Leu Arg Leu Gly Tyr
        210   215   220
His Phe Glu Leu Pro Gly Pro Arg Met Ser Met Thr Ser Ile Leu Thr

```
225                   230                    235                    240
Arg Asn Met Asp Lys Gln Arg Gln Lys Arg Leu Gln Glu Gln Lys Gln
                245                    250                    255
Gln Glu Gly Tyr Asp Gly Gly Pro Asn Leu Arg Thr Lys Val Trp Gln
                260                    265                    270
Arg Gly Thr Pro Ser Pro Ser Pro Tyr Val Ser Pro Arg His Ser Pro
                275                    280                    285
Trp Ser Ser Pro Lys Leu Pro Tyr Gly Glu Thr Thr Thr Arg
     290                   295                    300
```

```
<210> 4839
<211> 1313
<212> DNA
<213> Homo sapiens

<400> 4839
nnggcgctca gggcccccac aagaggtcga gggaatgttg tgggctgggg cacaccagca
60
cggcagaaac tggagaaagc gagagacgtc gccagggacc cagggacctc tccctccagt
120
tccccgggcc cgcccggccc tgatggccac tcacgctata gcgcccactc tgtcctgggc
180
catcccgcgc cagcagtgta gcccccagcc cgggcgcctg aatgctctcc ctccggatcg
240
ctgctcgggt ccccactttg gcgaccgntg ccccgagtc ctgcttcccc ggggcctgct
300
ctgtatcagg cgcctgcgcc ttcaagggta cccggcccgc ctgccctccc caagagccga
360
gtttgcgctc ctcccggaat cgtttgagag aaggacaaac ttttggcagg atggaaatct
420
agatgagcct gtccggagca gaacacccct gattagccag gcccaccgcc atccacatct
480
gctcggcaaa gaaggaaggc agcttgttcc agaccttggt gagcagctgc agactgcctg
540
cctagaacag cctccttact ccagcctggc agggaaggaa ggaacctgac ttgcttcgca
600
ggatctggaa gctcagccgg cagagctgag agccgcagtt gcatcctgga gcctgatgct
660
agaagcagct tccgtctttg ggttcttgct gcctcggcct ctgctctgtt cagtttgctg
720
ttgtgttttt ctcccccatg ttggggtggt ggggtacagg gaaataaaat gctttctccc
780
aggcccctaa tccttcccca tgcctccatc agcctcaaag ctgctgacag tcatgaactg
840
caccttccag ccctgcccat aagctactca aagcaaattc aaattctctt ctggccaggg
900
ggaagggcag atgctccctc cttcctcaag cctccctggc tcattgatcc attttgaggg
960
catttggggg tcaaagttga gaccagattg cttcagtttg tataaaatta gcatttctta
1020
tcacaccaag gccacacctg ttctctggcc tcacaaacca gtgaggatgt aaaggtttgt
1080
tgaggtggag gaacagaagt gaaatgagca atctgctcca tttagaagtc agtcgcttcg
1140
```

```
gctgttcatt ccactaatat ttatctagta cctattctgt gccaagcatt gtctctacct
1200
cagtttgcca caaatatgaa aaaaaaaaaa ttcttggaac tgtgaggctt caatgtgttg
1260
tggaccaata tacaaataaa ccaatggaaa agaaaaaaaa aaaaaaaaaa aaa
1313
```

```
<210> 4840
<211> 66
<212> PRT
<213> Homo sapiens
```

```
<400> 4840
Xaa Ala Leu Arg Ala Pro Thr Arg Gly Arg Gly Asn Val Val Gly Trp
 1               5              10             15
Gly Thr Pro Ala Arg Gln Lys Leu Glu Lys Ala Arg Asp Val Ala Arg
            20              25              30
Asp Pro Gly Thr Ser Pro Ser Ser Ser Pro Gly Pro Pro Gly Pro Asp
         35              40              45
Gly His Ser Arg Tyr Ser Ala His Ser Val Leu Gly His Pro Ala Pro
     50              55              60
Ala Val
65
```

```
<210> 4841
<211> 558
<212> DNA
<213> Homo sapiens
```

```
<400> 4841
acgcgtgcga gtgtgcggac tcagtggacg acggcggcgg cggcgaaagc ggatgaagac
60
cccggagcca acttgtttcc gccgccgctg ccccgacccc ggatctgcat gtggaagtac
120
ctggacgtcc attccatgca ccagctggag aagaccacca atgctgagat gagggaggtg
180
ctggctgagc tgctggagct agggtgtcct gagcagagcc tgagggacgc catcaccctg
240
gacctcttct gccacgcgct cattttctgc cgccagcagg gcttctcact ggagcagacg
300
tcagcggctt gtgccctgct ccaggatctt cacaaggctt gtattggcca catccacgtc
360
ctccgagcct acatcaagac ccaagtgaac aaagagctgg agcagctcca ggggctggtg
420
gaggagcgct caaggccagc gaggaaaggc tcagcagcaa gttgactgca ctagagcggc
480
ccttccagct actccgggta aaggcaagag caagaccaag tgaccccaa cattttcccc
540
aataaaggtc tgggccag
558
```

```
<210> 4842
<211> 118
<212> PRT
```

4021

<213> Homo sapiens

<400> 4842
Met Trp Lys Tyr Leu Asp Val His Ser Met His Gln Leu Glu Lys Thr
1   5   10   15
Thr Asn Ala Glu Met Arg Glu Val Leu Ala Glu Leu Leu Glu Leu Gly
            20   25   30
Cys Pro Glu Gln Ser Leu Arg Asp Ala Ile Thr Leu Asp Leu Phe Cys
            35   40   45
His Ala Leu Ile Phe Cys Arg Gln Gln Gly Phe Ser Leu Glu Gln Thr
    50   55   60
Ser Ala Ala Cys Ala Leu Leu Gln Asp Leu His Lys Ala Cys Ile Gly
65   70   75   80
His Ile His Val Leu Arg Ala Tyr Ile Lys Thr Gln Val Asn Lys Glu
                85   90   95
Leu Glu Gln Leu Gln Gly Leu Val Glu Glu Arg Ser Arg Pro Ala Arg
            100   105   110
Lys Gly Ser Ala Ala Ser
            115

<210> 4843
<211> 6403
<212> DNA
<213> Homo sapiens

<400> 4843
ggcacgagct gtaggagcag gggcctagca agcgcccagc ggagcgaccc ctgcctggcc
60
gtggctagca tggcccctac gctgttccag aagctcttca gcaagaggac cgggctgggc
120
gcgcccggcc gcgacgcccg ggacccagat tgcgggttca gttggccttt accagagttt
180
gatccaagcc agattcgact gattgtatat caagactgtg aaagacgagg gagaaatgtt
240
ttgtttgact ccagtgttaa gagaagaaat gaggacatat cagtatcgga cttaaatact
300
atttattctt atcttcatgg aatggaaata ttatcaaatc tcagggaaca tcagcttaga
360
ttaatgtctg caagagcacg ctatgagaga tacagtggca atcaggttct cttttgttca
420
gaaacgattg ccagatgttg gtatatccta ctttctggat ctgtgcttgt gaaaggctcc
480
atggtcttgc ctccttgcag ttttggtaag cagtttggag gaaaaagagg atgtgattgt
540
cttgtattag agccttcaga aatgattgtg gtagagaatg ccaaagataa tgaagatagt
600
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Pro Asp Cys Gly Phe Ser Trp Pro Leu Pro Glu Phe Asp Pro Ser Gln
    50                  55                  60
Ile Arg Leu Ile Val Tyr Gln Asp Cys Glu Arg Arg Gly Arg Asn Val
65                  70                  75                  80
Leu Phe Asp Ser Ser Val Lys Arg Arg Asn Glu Asp Ile Ser Val Ser
                85                  90                  95
Asp Leu Asn Thr Ile Tyr Ser Tyr Leu His Gly Met Glu Ile Leu Ser
            100                 105                 110
Asn Leu Arg Glu His Gln Leu Arg Leu Met Ser Ala Arg Ala Arg Tyr
        115                 120                 125
Glu Arg Tyr Ser Gly Asn Gln Val Leu Phe Cys Ser Glu Thr Ile Ala
    130                 135                 140
Arg Cys Trp Tyr Ile Leu Leu Ser Gly Ser Val Leu Val Lys Gly Ser
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Met Val Leu Pro Pro Cys Ser Phe Gly Lys Gln Phe Gly Gly Lys Arg
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Gly Cys Asp Cys Leu Val Leu Glu Pro Ser Glu Met Ile Val Val Glu
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Thr Asp Asp Asp Ile Glu Gln Leu Leu Glu Phe Met His Gln Leu Pro
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Tyr Trp Arg Ile Leu Asn His Val Glu Lys Asn Thr His Lys Val Glu
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Ile Glu Asp Phe Leu Leu Thr Tyr Arg Thr Phe Leu Glu Ser Pro Leu
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Asp Lys Val Thr Arg Ile Val Leu Leu Trp Val Asn Asn His Phe Asn
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Asp Phe Glu Gly Asp Pro Ala Met Thr Arg Phe Leu Glu Glu Phe Glu
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Lys Asn Leu Glu Asp Thr Lys Met Asn Gly His Leu Arg Leu Leu Asn
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Gln Asn Phe Glu Asn Ile Thr Phe Met Lys Ala Val Glu Ile Leu Arg
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Asn Asn Thr His Leu Ala Leu Thr Val Lys Thr Asn Ile Phe Val Phe
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Lys Glu Leu Leu Phe Arg Thr Glu Gln Glu Lys Ser Gly Val Pro His
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Ile Pro Lys Ile Ala Glu Lys Lys Ser Asn Arg His Ser Ile Gln His
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Val Pro Gly Asp Ile Glu Gln Thr Ser Gln Glu Lys Gly Ser Lys Lys
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Val Lys Ala Asn Thr Val Ser Gly Gly Arg Asn Lys Ile Arg Lys Ile
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Leu Asp Lys Thr Arg Phe Ser Ile Leu Pro Pro Lys Leu Phe Ser Asp
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Cys Arg His Ser Leu Ala Ile Met Pro Ile Pro Gly Thr Leu Ser Ser
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Thr Tyr Ser Leu Cys Glu Val Ser Val Thr Pro Glu Gly Val Ile Lys
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Gln Arg Arg Leu Pro Asp Gln Phe Ser Lys Leu Ala Asp Arg Ile Gln
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Cys Ser Asp Glu Asp Ala Gln Glu Leu Val Lys Glu Ser Gln Leu Ser
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Asp Phe Asp Leu Phe Arg Asn Ile Glu Pro Thr Glu Tyr Ile Asp Asp
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Thr Glu Ala Asn Gln Leu Lys Arg Met Lys Ile Ile Lys His Phe Ile
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1740
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1800
atggccgcca tcttcaagat tgccacccag cccaccaatc ctcagctgcc ctcccacatc
1860
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1920
gctgaggagc tgctcacaca ccactttgca cagctcatgt actgagctct cacggccaca
1980
cagctgccgg tcgccctttg ctgcatggca gggggctgct gctgggctca gtgaagttgc
2040
tgcttctccc aggcaaggct gtggaccatg gagtggcagc ccagccagcg tcggtctgtg
2100
ccccttccgc cactggggct cagagccggg gtggggtggc tgcagcctca ggactgggag
2160
cccccagcct gtcagatcca ggagctccag tgtcctgagc tcagcgtgga ggggtagggg
2220
ctgggaacag tgtgcaaggc agccgtgggc cccaccctcg gggatgtgtc ctgacactgc
2280
```

                                        4031

```
aattggcacc gaagcccaga gggtctgggg gcacaagact gacgccaggg tatgaagagt
2340
gttattttca ttcaaagtgt tattttgttt ttccttccaa tgtctggaga ccaccagggc
2400
atctctgggc tggatgagct cccacaagcc tgagggaaag gccagcactc gctagcagtg
2460
gcaggcagag gcccaggctg ccgtccccta gagtcccagg ttggctctgc cagtcctgtc
2520
ctttaccaaa gatgaatgaa gcaaatgtca tgctgcctta ttcagggaag gaggagcctg
2580
tcctgcctgt ggccatgacc ctgcctctcc caggcagggg cccgcgatgt ggaactgctg
2640
ccactgaggg gggatccagt tttgtcaatg cagttgtctc tgttttacaa gttggagtca
2700
ctcttatgct gtacccagtt tctaaactgg agactgtgtg tgccctctgg gctctgagta
2760
cccctgcttt gggcttgggc ctaggctgca ttgaaaagag ctgaaggttg tggcctttgc
2820
gctcctggcc cagcctttgt tccccactgg agcagaaggg gagatggacg acacggtggg
2880
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2940
tgagtcgtga cctgctaggc cagagcccac tccatctggt agaagggaaa gcccatatgc
3000
taccaccagc tgtgtccaaa accgccagct ctgttcttcc tcagccagcc tcgcccatcc
3060
ccttgaggtc tcagcccctt tcccttgtag ctcctcccct ggagggggaa tggcagcagg
3120
ggttggggaa acagcatctc caagcagctt agagttggcc atatttacct cagcctgggc
3180
gctggtcctt tcttccggcc cctcccctcc aaaatgtgcc tattgctaga gctcctccct
3240
ctcaacaccc agtttccttg ggagttgtca ttaaaggaaa aaaaaa
3286
```

```
<210> 4846
<211> 626
<212> PRT
<213> Homo sapiens
```

```
<400> 4846
Met Asp Glu Gln Glu Ala Leu Asn Ser Ile Met Asn Asp Leu Val Ala
1               5                   10                  15
Leu Gln Met Asn Arg Arg His Arg Met Pro Gly Tyr Glu Thr Met Lys
            20                  25                  30
Asn Lys Asp Thr Gly His Ser Asn Arg Gln Ser Asp Val Arg Ile Lys
        35                  40                  45
Phe Glu His Asn Gly Glu Arg Arg Ile Ile Ala Phe Ser Arg Pro Val
    50                  55                  60
Lys Tyr Glu Asp Val Glu His Lys Val Thr Thr Val Phe Gly Gln Pro
65                  70                  75                  80
Leu Asp Leu His Tyr Met Asn Asn Glu Leu Ser Ile Leu Leu Lys Asn
                85                  90                  95
Gln Asp Asp Leu Asp Lys Ala Ile Asp Ile Leu Asp Arg Ser Ser Ser
```

```
                  100                    105                    110
Met Lys Ser Leu Arg Ile Leu Leu Leu Ser Gln Asp Arg Asn His Asn
        115                    120                    125
Ser Ser Ser Pro His Ser Gly Val Ser Arg Gln Val Arg Ile Lys Ala
    130                    135                    140
Ser Gln Ser Ala Gly Asp Ile Asn Thr Ile Tyr Gln Pro Pro Glu Pro
145                    150                    155                    160
Arg Ser Arg His Leu Ser Val Ser Ser Gln Asn Pro Gly Arg Ser Ser
                  165                    170                    175
Pro Pro Pro Gly Tyr Val Pro Glu Arg Gln Gln His Ile Ala Arg Gln
                  180                    185                    190
Gly Ser Tyr Thr Ser Ile Asn Ser Glu Gly Glu Phe Ile Pro Glu Thr
              195                    200                    205
Ser Glu Gln Cys Met Leu Asp Pro Leu Ser Ser Ala Glu Asn Ser Leu
    210                    215                    220
Ser Gly Ser Cys Gln Ser Leu Asp Arg Ser Ala Asp Ser Pro Ser Phe
225                    230                    235                    240
Arg Lys Ser Arg Met Ser Arg Ala Gln Ser Phe Pro Asp Asn Arg Gln
                  245                    250                    255
Glu Tyr Ser Asp Arg Glu Thr Gln Leu Tyr Asp Lys Gly Val Lys Gly
                  260                    265                    270
Gly Thr Tyr Pro Arg Arg Tyr His Val Ser Val His His Lys Asp Tyr
              275                    280                    285
Ser Asp Gly Arg Arg Thr Phe Pro Arg Ile Arg Arg His Gln Gly Asn
    290                    295                    300
Leu Phe Thr Leu Val Pro Ser Ser Arg Ser Leu Ser Thr Asn Gly Glu
305                    310                    315                    320
Asn Met Gly Leu Ala Val Gln Tyr Leu Asp Pro Arg Gly Arg Leu Arg
                  325                    330                    335
Ser Ala Asp Ser Glu Asn Ala Leu Ser Val Gln Glu Arg Asn Val Pro
              340                    345                    350
Thr Lys Ser Pro Ser Ala Pro Ile Asn Trp Arg Arg Gly Lys Leu Leu
    355                    360                    365
Gly Gln Gly Ala Phe Gly Arg Val Tyr Leu Cys Tyr Asp Val Asp Thr
    370                    375                    380
Gly Arg Glu Leu Ala Ser Lys Gln Val Gln Phe Asp Pro Asp Ser Pro
385                    390                    395                    400
Glu Thr Ser Lys Glu Val Ser Ala Leu Glu Cys Glu Ile Gln Leu Leu
              405                    410                    415
Lys Asn Leu Gln His Glu Arg Ile Val Gln Tyr Tyr Gly Cys Leu Arg
          420                    425                    430
Asp Arg Ala Glu Lys Thr Leu Thr Ile Phe Met Glu Tyr Met Pro Gly
          435                    440                    445
Gly Ser Val Lys Asp Gln Leu Lys Ala Tyr Gly Ala Leu Thr Glu Ser
    450                    455                    460
Val Thr Arg Lys Tyr Thr Arg Gln Ile Leu Glu Gly Met Ser Tyr Leu
465                    470                    475                    480
His Ser Asn Met Ile Val His Arg Asp Ile Lys Gly Ala Asn Ile Leu
              485                    490                    495
Arg Asp Ser Ala Gly Asn Val Lys Leu Gly Asp Phe Gly Ala Ser Lys
          500                    505                    510
Arg Leu Gln Thr Ile Cys Met Ser Gly Thr Gly Met Arg Ser Val Thr
    515                    520                    525
Gly Thr Pro Tyr Trp Met Ser Pro Glu Val Ile Ser Gly Glu Gly Tyr
```

```
      530                   535                  540
Gly Arg Lys Ala Asp Val Trp Ser Leu Gly Cys Thr Val Val Glu Met
545                   550                  555                  560
Leu Thr Glu Lys Pro Pro Trp Ala Glu Tyr Glu Ala Met Ala Ala Ile
                565                  570                  575
Phe Lys Ile Ala Thr Gln Pro Thr Asn Pro Gln Leu Pro Ser His Ile
            580                  585                  590
Ser Glu His Gly Arg Asp Phe Leu Arg Arg Ile Phe Val Glu Ala Arg
            595                  600                  605
Gln Arg Pro Ser Ala Glu Glu Leu Leu Thr His His Phe Ala Gln Leu
      610                  615                  620
Met Tyr
625
```

<210> 4847
<211> 2804
<212> DNA
<213> Homo sapiens

<400> 4847

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ccaacagcag cggagaaacg tttctctttc ctctcagttt gcgcacacca tggcggcccc
60
tgcccagcag actactcagc ctggcggcgg gaagcgcaaa ggcaaggctc agtatgtgct
120
ggccaagcgc gctcggcgct gcgacgctgg cgggccccgt cagctagagc ccgggctaca
180
gggcatcctc atcacctgca atatgaacga gcgcaagtgc gtggaggagg cctacagcct
240
cctcaacgaa tacggcgacg acatgtatgg gccagaaaag ttttatgcaa acagtttaca
300
gacaaggatc agcagccctc tggaagtgag ggagaggatg atgatgcgga ggctgccttg
360
aagaaagaag ttggtgacat taaggcatct acagagatga ggttaagaag attccagtca
420
gtggaaagtg gagcaaataa cgttgtcttc atcaggacac ttgggataga gcctgagaaa
480
ttggtgcatc atattctcca ggatatgtac aaaaccaaga aaaagaagac tcgagttatt
540
ttgcgaatgt tacccatctc aggcacatgc aaggcttttt tagaagatat gaaaaaatat
600
gcagaaacat ttttggaacc ctggtttaaa gctccaaaca aagggacatt tcagattgtg
660
tacaaatctc gaaataacag tcatgtgaat agagaagaag ttatcagaga attggcagga
720
atagtgtgca ccctcaattc agaaaataaa gtggatctca ccaatccaca gtacacagtg
780
gtagtagaaa tcatcaaagc tgtctgttgc ctgagtgttg tgaaagatta catgttgttt
840
agaaaataca atctccagga ggtggtgaag agccctaagg atccgtcaca gcttaactca
900
aagcagggaa atgggaaaga agctaaactg gaatctgcgg acaaatcaga ccaaaacaac
960
acagcagaag gaaaaaataa ccagcaggta ccagagaata ctgaggagct agggcagaca
1020
```

```
aaaccaacgt ctaatccaca ggtggtaaat gagggaggag ccaaacctga acttgcaagt
1080
caagccacag aaggatccaa gtcaaatgaa aatgacttct cataggaagt catttggtgt
1140
tggagctgac agtccagtgt cgcaattttg gaaggcaaga tgtgagagag acgagaacca
1200
ttttaggcat agaactacag acatttctga aaaggttggt gatgaagaac ttcagtcttc
1260
tgagtatact tcagtatact agtgcaacaa gggacacaaa gaaattctgt cttaataaag
1320
aaagctactt ctcaagggta ttatgtggac tcagtccaag ctctcctgtc ccattgtgca
1380
ttgtctgtga catgcaactt acaaaactag caattgtaac aataaatcac agccacttga
1440
caagaaagga tattcattat tttcaaatgg cttttggact atcaaaaaca gtaaggcttt
1500
tgttcagaaa tcacctttag tcaaaaggtt taagaagcaa attatttagt agcagaactt
1560
atctcaggaa aggaaaatat gcatggttgg tgagaatcta ataacattaa aatgctgggg
1620
caagatgcag tacaaagttg aagagacttt attctcaata agttgattta ctgatgatat
1680
gtcatatgat gcaaaaaagg ttttgtgtca ttaactgaaa agtagcagct tctctatcca
1740
ggatgatgag tcaacaggtt tcactaatat ttgtcatgct gtagcatttg taagatttgt
1800
aaatgatgaa attcaaagaa aacttttct attgctagga gcctgccaga acaaaggcca
1860
atatataatg ttgtgacatc atatctgata accagaggtc tggtatctac actcctggtg
1920
ccccatcagt ggttgtctcc ataagtcatt ttgcgttatt aaaaaaaaaa aaagaaatcc
1980
tgatgttgac attatagcac actgctttct ccacagagat gctgatatca aaaacttgaa
2040
gatacagtga agttctgaat aatgttacaa aactggttac ctgtatcaaa gacccattta
2100
tgcaaaaatg ttaaaaaaaa aaaacaccca aaacaaaaac ctggacagac agcacataaa
2160
cctcctgccc catacaaaca tccaggggct tctcaaagga agcgttctct acaggatatt
2220
tgaattgaaa ggtgaattgc cagagtactt acaataaaac agccagcttt tgctgagtgc
2280
tttggaaatg aaaaatgact acagaaagta gcctattttg cagacgtttt tcatcacatg
2340
aacaaatgga caagtctctg aaaggttctg gggaaaaaaa tttttcttaa agcgacaaga
2400
ctcttagatc taaaaggaaa ctgacttgcc accttgccag aggaattctt gaaatgtttc
2460
tgcagccact tggccttgaa aataaagggt gcaactctca agtcttgttc taacccggct
2520
ggaggaacca caagacccaa tgaaatagca ttttctctcc ttttcccagc actagtatat
2580
aacctatgag gaacccttgt ctctgaatct gctcagcttg aaattttgtc tctgaaggaa
2640
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gagaatgaac tcagccctag tctgacagtc ctagatttct gtgaaataag agtattcttc
2700
aacttagtgc tcacactcac ataccatgag ggttctctgc aggggtttag gggtttcctg
2760
aatttaaaag ttttttcaag gcctcttttt gggtaaaaca attg
2804


<210> 4848
<211> 242
<212> PRT
<213> Homo sapiens


<400> 4848
Met Arg Leu Arg Arg Phe Gln Ser Val Glu Ser Gly Ala Asn Asn Val
1               5                   10                  15
Val Phe Ile Arg Thr Leu Gly Ile Glu Pro Glu Lys Leu Val His His
            20                  25                  30
Ile Leu Gln Asp Met Tyr Lys Thr Lys Lys Lys Thr Arg Val Ile
        35                  40                  45
Leu Arg Met Leu Pro Ile Ser Gly Thr Cys Lys Ala Phe Leu Glu Asp
    50                  55                  60
Met Lys Lys Tyr Ala Glu Thr Phe Leu Glu Pro Trp Phe Lys Ala Pro
65                  70                  75                  80
Asn Lys Gly Thr Phe Gln Ile Val Tyr Lys Ser Arg Asn Asn Ser His
                85                  90                  95
Val Asn Arg Glu Glu Val Ile Arg Glu Leu Ala Gly Ile Val Cys Thr
            100                 105                 110
Leu Asn Ser Glu Asn Lys Val Asp Leu Thr Asn Pro Gln Tyr Thr Val
        115                 120                 125
Val Val Glu Ile Ile Lys Ala Val Cys Cys Leu Ser Val Val Lys Asp
    130                 135                 140
Tyr Met Leu Phe Arg Lys Tyr Asn Leu Gln Glu Val Val Lys Ser Pro
145                 150                 155                 160
Lys Asp Pro Ser Gln Leu Asn Ser Lys Gln Gly Asn Gly Lys Glu Ala
                165                 170                 175
Lys Leu Glu Ser Ala Asp Lys Ser Asp Gln Asn Asn Thr Ala Glu Gly
            180                 185                 190
Lys Asn Asn Gln Gln Val Pro Glu Asn Thr Glu Glu Leu Gly Gln Thr
        195                 200                 205
Lys Pro Thr Ser Asn Pro Gln Val Val Asn Glu Gly Gly Ala Lys Pro
    210                 215                 220
Glu Leu Ala Ser Gln Ala Thr Glu Gly Ser Lys Ser Asn Glu Asn Asp
225                 230                 235                 240
Phe Ser


<210> 4849
<211> 321
<212> DNA
<213> Homo sapiens


<400> 4849
nccatgtgtg gaggcagaga ggcagcatcc aggcgctggt cctctcggga catgctgctg
60
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ctgaagaaac acacggagga catcagcagc gtctacgaga tccgcgagag gctcggctcg
120
ggtgccttct ccgaggtggt gctggcccag gagcggggct ccgcacacct cgtggccctc
180
aagtgcatcc ccaagaaggc cctccggggc aaggaggccc tggtggagaa cgagatcgca
240
gtgctccgta ggatcagtca ccccaacatc gtcgctctgg aggatgtcca cgagagccct
300
tcccacctct acctggccat g
321

<210> 4850
<211> 90
<212> PRT
<213> Homo sapiens

<400> 4850
Met Leu Leu Leu Lys Lys His Thr Glu Asp Ile Ser Ser Val Tyr Glu
1   5   10   15
Ile Arg Glu Arg Leu Gly Ser Gly Ala Phe Ser Glu Val Val Leu Ala
            20   25   30
Gln Glu Arg Gly Ser Ala His Leu Val Ala Leu Lys Cys Ile Pro Lys
        35   40   45
Lys Ala Leu Arg Gly Lys Glu Ala Leu Val Glu Asn Glu Ile Ala Val
    50   55   60
Leu Arg Arg Ile Ser His Pro Asn Ile Val Ala Leu Glu Asp Val His
65   70   75   80
Glu Ser Pro Ser His Leu Tyr Leu Ala Met
                85   90

<210> 4851
<211> 820
<212> DNA
<213> Homo sapiens

<400> 4851
aagatctgag cgagtcgcgt agctgagccc ggcaggggct ggggtggtgc tgctgctatg
60
agttgcacca tcgagaagat cctgacagac gccaagacgc tgctggagag gctacgggag
120
cacgatgcgg ccgccgagtc gctggtggat cagtcggcgg cgctgcaccg gcgggtagca
180
gctatgcggg aggcggggac agcgcttccg gaccagtatc aagaggatgc atccgatatg
240
aaggacatgt ccaaatacaa acctcacatt ctgctgtccc aagagaacac acagattaga
300
gacttgcaac aggaaaacag agagctatgg atttccttgg aggaacacca ggatgctttg
360
gaacttatca tgagcaaata tcggaaacag atgttacagt taatggttgc taaaaaagcg
420
gtggatgctg aaccagtcct gaaagctcac cagtctcact ctgcagaaat tgagagtcag
480
attgacagaa tctgtgaaat gggagaagtg atgaggaaag cagttcaggt ggatgatgac
540

4037

```
cagttttgta agattcagga aaaattagcc caattagagc ttgaaaataa ggaacttcga
600
gaattattgt ccatcagcag tgagtctctt caagccagaa aggaaaactc aatggacact
660
gcttcccaag ccatcaaata actgaactct gaatgatggc tggagattgt ctatcaagga
720
aggaagttac tgtcttccca ttcaagtact gtccattaag tgtcttgcct cagatttgat
780
ttaatcttaa ttaaaggtat caggtggcaa tttagaattc
820
```

<210> 4852
<211> 207
<212> PRT
<213> Homo sapiens

<400> 4852

```
Met Ser Cys Thr Ile Glu Lys Ile Leu Thr Asp Ala Lys Thr Leu Leu
 1               5                  10                  15
Glu Arg Leu Arg Glu His Asp Ala Ala Ala Glu Ser Leu Val Asp Gln
            20                  25                  30
Ser Ala Ala Leu His Arg Arg Val Ala Ala Met Arg Glu Ala Gly Thr
         35                  40                  45
Ala Leu Pro Asp Gln Tyr Gln Glu Asp Ala Ser Asp Met Lys Asp Met
      50                  55                  60
Ser Lys Tyr Lys Pro His Ile Leu Leu Ser Gln Glu Asn Thr Gln Ile
65               70                  75                  80
Arg Asp Leu Gln Gln Glu Asn Arg Glu Leu Trp Ile Ser Leu Glu Glu
            85                  90                  95
His Gln Asp Ala Leu Glu Leu Ile Met Ser Lys Tyr Arg Lys Gln Met
         100                 105                 110
Leu Gln Leu Met Val Ala Lys Lys Ala Val Asp Ala Glu Pro Val Leu
      115                 120                 125
Lys Ala His Gln Ser His Ser Ala Glu Ile Glu Ser Gln Ile Asp Arg
   130                 135                 140
Ile Cys Glu Met Gly Glu Val Met Arg Lys Ala Val Gln Val Asp Asp
145                 150                 155                 160
Asp Gln Phe Cys Lys Ile Gln Glu Lys Leu Ala Gln Leu Glu Leu Glu
               165                 170                 175
Asn Lys Glu Leu Arg Glu Leu Leu Ser Ile Ser Ser Glu Ser Leu Gln
            180                 185                 190
Ala Arg Lys Glu Asn Ser Met Asp Thr Ala Ser Gln Ala Ile Lys
         195                 200                 205
```

<210> 4853
<211> 1467
<212> DNA
<213> Homo sapiens

<400> 4853

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ntgtgaggtc gcgttcccca gtgttacgga gggtccttga ggcaggagtg aaaattgggt
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ctgggggtta gtcctggggt ggaggtctgg gcacgccggg tcggaccccc tccatcttcg
120
```

```
gttttgcaca cccccgctttc cagcgcggag tcgggcgggg gtagggcggc gtcgcgtgcg
180
tgacgtcatc cagcggcgcc atcggaggct ccagtggcct tgacctcccg cgtcgtgtag
240
gcctgcgcgg cgatgctgca gttcgtccgg gccggggcgc gggcctggct tcggcctacc
300
ggcagccagg gcctgagttc cctggcggaa gaggcagcgc gtgcgaccga gaacccggag
360
caggtggcga gcgagggtct cccggagccc gtgctgcgca aagtcgagct cccggtaccc
420
actcatcgac gcccagtgca ggcctgggtc gagtccttgc ggggcttcga gcaggagcgc
480
gtgggcctgg ccgacctgca ccccgatgtt ttcgccaccg cgcccaggct ggacatactg
540
caccaggttg ctatgtggca gaagaacttc aagagaatta gctatgccaa gaccaagacg
600
agagccgagg tgcggggcgg tggccggaag cctntggccg cagaaaggca ctgggcgggc
660
ccggcatggc agcatccgct ctccgctctg gcgaggagga ggtgttgccc atggcccccg
720
ggccccacaa gttactacta catgctgccc atgaaggtgc gggcgctggg tctcaaagtg
780
gcactgaccg tcaagctggc ccaggacgac ctgcacatca tggactccct agagctgccc
840
accggagacc cacagtacct gacagagctg gcgcactacc gccgctgggg ggactccgta
900
ctcctcgtgg acttaacaca cgaggagatg ccacagagca tcgtggaggc cacctctagg
960
cttaagacct tcaacttgat cccggctgtt ggcctaaatg tgcacagcat gctcaagcac
1020
cagacgctgg tcctgacgct gcccaccgtc gccttcctgg aggacaagct gctctggcag
1080
gactcacgtt acagacccct ctacccttc agcctgccct acagcgactt cccccgaccc
1140
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1200
cttctgagcc aggccgagcc cctggccgac ttgggagcct taggcccacg cccacccttc
1260
gaggaaggtg tcacctggac cccttcattc cacggaggaa gctgaggcca cagggagcgg
1320
ccatcgccat tgggaagggg cgactccacg gagagcccag acggggcttc tgcatccatt
1380
ccctcttttt gttttaaaa taaattgtat ttttgaatca aaaaaaaaa aaaaaaaaa
1440
aaaaaaaaaa aaaaaaaaaa aaaaaaa
1467


<210> 4854
<211> 311
<212> PRT
<213> Homo sapiens


<400> 4854
Met Leu Gln Phe Val Arg Ala Gly Ala Arg Ala Trp Leu Arg Pro Thr
```

4039

```
     1                  5                       10                      15
  Gly Ser Gln Gly Leu Ser Ser Leu Ala Glu Glu Ala Ala Arg Ala Thr
              20                      25                      30
  Glu Asn Pro Glu Gln Val Ala Ser Glu Gly Leu Pro Glu Pro Val Leu
              35                      40                      45
  Arg Lys Val Glu Leu Pro Val Pro Thr His Arg Arg Pro Val Gln Ala
              50                      55                      60
  Trp Val Glu Ser Leu Arg Gly Phe Glu Gln Glu Arg Val Gly Leu Ala
  65               70                      75                      80
  Asp Leu His Pro Asp Val Phe Ala Thr Ala Pro Arg Leu Asp Ile Leu
                  85                      90                      95
  His Gln Val Ala Met Trp Gln Lys Asn Phe Lys Arg Ile Ser Tyr Ala
              100                     105                     110
  Lys Thr Lys Thr Arg Ala Glu Val Arg Gly Gly Gly Arg Lys Pro Xaa
              115                     120                     125
  Ala Ala Glu Arg His Trp Ala Gly Pro Ala Trp Gln His Pro Leu Ser
              130                     135                     140
  Ala Leu Ala Arg Arg Arg Cys Cys Pro Trp Pro Pro Gly Pro Thr Ser
  145                     150                     155                     160
  Tyr Tyr Tyr Met Leu Pro Met Lys Val Arg Ala Leu Gly Leu Lys Val
                  165                     170                     175
  Ala Leu Thr Val Lys Leu Ala Gln Asp Asp Leu His Ile Met Asp Ser
              180                     185                     190
  Leu Glu Leu Pro Thr Gly Asp Pro Gln Tyr Leu Thr Glu Leu Ala His
              195                     200                     205
  Tyr Arg Arg Trp Gly Asp Ser Val Leu Leu Val Asp Leu Thr His Glu
              210                     215                     220
  Glu Met Pro Gln Ser Ile Val Glu Ala Thr Ser Arg Leu Lys Thr Phe
  225                     230                     235                     240
  Asn Leu Ile Pro Ala Val Gly Leu Asn Val His Ser Met Leu Lys His
                  245                     250                     255
  Gln Thr Leu Val Leu Thr Leu Pro Thr Val Ala Phe Leu Glu Asp Lys
              260                     265                     270
  Leu Leu Trp Gln Asp Ser Arg Tyr Arg Pro Leu Tyr Pro Phe Ser Leu
              275                     280                     285
  Pro Tyr Ser Asp Phe Pro Arg Pro Leu Pro His Ala Thr Gln Gly Pro
      290                     295                     300
  Ala Ala Thr Pro Tyr His Cys
  305                     310
```

<210> 4855
<211> 750
<212> DNA
<213> Homo sapiens

<400> 4855
nncgcaggag taacctactt ggtctcctgc tttcgcgaca tggccttcaa ttttggggct
60
ccctcgggca cctccggtac cgctgcagcc accgcggccc ccgcgggtgg gtttggagga
120
tttgggacaa catctacaac tgcaggttct gcattcagct tttctgcccc aactaacaca
180
ggcactactg gactctttgg tggtactcag aacaaaggtt ttggatttgg tactggtttt
240

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ggcacaacaa cgggaactag tactggttta ggtactggtt tgggaactgg actgggattt
300
ggaggattta atacacagca gcagcagcag caaactacat taggtggtct cttcagtcag
360
cctacacaag ctcctaccca gtccaaccag ctgataaata ctgcgagtgc tctttctgct
420
ccaacgctgt tgggagatga gagagatgct attttggcaa aatggaatca actgcaggcc
480
ttttggggaa caggaaaagg gtatttcaac aataatattc cgccagtgga attcacacaa
540
gaaaatccct tttgccgatt taaggcagta ggttatagtt gcatgcccag taataaagat
600
gaagacgggc tagtggtttt agttttcaac aaaaaagaaa cagagattcg aagccaacaa
660
caacagttgg tagaatcatt gcataaagtt ttgggaggaa accagaccct tactgtaaat
720
gtagagggca ctaaaacatt gccagatgat
750


<210> 4856
<211> 237
<212> PRT
<213> Homo sapiens

<400> 4856
Met Ala Phe Asn Phe Gly Ala Pro Ser Gly Thr Ser Gly Thr Ala Ala
 1               5                  10                  15
Ala Thr Ala Ala Pro Ala Gly Gly Phe Gly Gly Phe Gly Thr Thr Ser
            20                  25                  30
Thr Thr Ala Gly Ser Ala Phe Ser Phe Ser Ala Pro Thr Asn Thr Gly
        35                  40                  45
Thr Thr Gly Leu Phe Gly Gly Thr Gln Asn Lys Gly Phe Gly Phe Gly
    50                  55                  60
Thr Gly Phe Gly Thr Thr Thr Gly Thr Ser Thr Gly Leu Gly Thr Gly
65                  70                  75                  80
Leu Gly Thr Gly Leu Gly Phe Gly Gly Phe Asn Thr Gln Gln Gln Gln
                85                  90                  95
Gln Gln Thr Thr Leu Gly Gly Leu Phe Ser Gln Pro Thr Gln Ala Pro
            100                 105                 110
Thr Gln Ser Asn Gln Leu Ile Asn Thr Ala Ser Ala Leu Ser Ala Pro
        115                 120                 125
Thr Leu Leu Gly Asp Glu Arg Asp Ala Ile Leu Ala Lys Trp Asn Gln
    130                 135                 140
Leu Gln Ala Phe Trp Gly Thr Gly Lys Gly Tyr Phe Asn Asn Asn Ile
145                 150                 155                 160
Pro Pro Val Glu Phe Thr Gln Glu Asn Pro Phe Cys Arg Phe Lys Ala
                165                 170                 175
Val Gly Tyr Ser Cys Met Pro Ser Asn Lys Asp Glu Asp Gly Leu Val
            180                 185                 190
Val Leu Val Phe Asn Lys Lys Glu Thr Glu Ile Arg Ser Gln Gln Gln
        195                 200                 205
Gln Leu Val Glu Ser Leu His Lys Val Leu Gly Gly Asn Gln Thr Leu
    210                 215                 220
Thr Val Asn Val Glu Gly Thr Lys Thr Leu Pro Asp Asp
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225   230   235

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<210> 4857
<211> 2887
<212> DNA
<213> Homo sapiens

<400> 4857
nncggccggc gagggcagat ggaagagtat gaggaagagc cctctcgggg gtggtggcgg
60
ctcgggagct ccagtcaggc cgcctgcctc aaacagatcc ttctgctgca attggacctc
120
atcgaacagc agcagcagca gctgcaggcc aaggaaaagg agatcgagga gctgaagtca
180
gagagagaca cgctccttgc tcggattgaa cgtatggaaa ggcggatgca gctggtaaag
240
aaggataacg agaaagaaag gcacaagctg tttcagggct atgaaactga agagagagag
300
gaaacagagc tatctgagaa aattaaactg gagtgccagc cggagctttc cgagacatcc
360
cagactctgc ctcccaagcc cttctcatgt gggcggagtg gaaagggaca taaaaggaaa
420
tccccatttg gaagtacaga aagaaagact cctgttaaaa agctggctcc tgaattttca
480
aaagtcaaaa caaaaactcc taagcactct cctattaaag aggaaccctg tggttcctta
540
tctgaaactg tttgtaaacg tgaattgagg agccaagaaa ccccagaaaa gccccggtct
600
tcagtggaca ccccaccaag actctccact ccccaaaagg gacccagcac ccatcccaag
660
gagaaagcct ctcaagtga gatagaagat ttgccgtacc tttccaccac agaaatgtat
720
ttgtgtcgtt ggcaccagcc tcccccatca ccgttaccat tacgggaatc ctctccaaag
780
aaggaggaga ctgtagcaag taaggcatag agaacacttg ctcttatacc ctagtggtgg
840
cggtcaagct aacaagtgtg aaaatgcctt tggcattttt aaaaaagtgc aatcaataaa
900
gcagagttct gtcaagaatg agtaagttaa cagccagaga cagacactgt gcaggcattg
960
caaatagatg gaattacagc aaaatgtgct caatgtattt gcctgcttac aacactggga
1020
gatgtgtttg ccagtaagtt gctcatcaca agagcaccag acttggggt gtaatctccg
1080
gcaacttgca tgccctctga agaagggtt ttctgtgctg tgaaatgcat agaactatac
1140
tttgccatgc acgactgttc ctgcaattga tattgtgtga atctgggag ggtggtcttt
1200
gggtgttctc aggggccaat ggtaattttt gggttgggga gccagcttgg ggtggggaat
1260
tttcacctgg gcctccgctc tttaactata taaacattta tctgtatatc tatgtccctg
1320
tctggggggc aggaggaatc tgccaaagac caacagtctt actttatctt actatacttc
1380
```

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acaaaggttc taaaatgtga agagtttgtt tgaaaaatag tttgtagacc attttatttta
1440
aatatatgaa caaccaatgg gctactgcaa tccaagtaaa ctcttcacat tttagaacct
1500
ttgtgaagta tagtaagata aagtaagact gttggtcttt ggcagattcc tcctgccccc
1560
cagacaggga catagatata cagataaatg tttatatagt taaagagcgg aggcccaggt
1620
gaaaattccc caccccaagc tggctcccca acccaaaaat taccattggc ccctgagaac
1680
acccaaagac caccctccca gatttcacac aatatcaatt gcaggaacag tcgtgcatgg
1740
caaagtatag ttctatgcat ttcacagcac agaaaaccct tctttcagag ggcatgcaag
1800
ttgccggaga ttacaccccc aagtctggtg ctcttgtgat gagcaactta ctggcaaaca
1860
catctcccag tgttgtaagc aggcaaatac attgagcaca ttttgctgta attccatcta
1920
tttgcaatgc ctgcacagtg tctgtctctg gctgttaact tactcattct tgacagaact
1980
ctgctttatt gattgcactt ttttaaaaat gccaaaggca ttttcacact tgttagcttg
2040
accgccacca ctagggtata agagcaagtg ttctctatgc cttacttgct acagtctcct
2100
ccttctttgg agaggattcc cgtaatggta acggtgatgg gggaggctgg tgccaacgac
2160
acaaatacat ttctgtggtg gaaaggtacg gcaaatcttc tatctcactt gagaaggctt
2220
tctccttggg atgggtgctg ggtccctttt ggggagtgga gagtcttggt ggggtgtcca
2280
ctgaagaccg gggcttttct ggggtttctt ggctcctcaa ttcacgttta caaacagttt
2340
cagataagga accacagggt tcctctttaa taggagagtg cttaggagtt tttgtttga
2400
cttttgaaaa ttcaggagcc agcttttaa caggagtctt tctttctgta cttccaaatg
2460
ggggtagaag tctaaccct ccaccccctc tcctccccag cagtcccacg cgggtatggg
2520
agagaatgaa gttctttgtc tctaagggat tcaaaccaga aacggaggga cctctggttc
2580
ccagagggag gaaaatccat gatgtctgct gcccagggag ctattgccac cgcctccttg
2640
ggatgaagta ttgccagcta ccaacagttc cttcccaacg gccatcttcc agccttctta
2700
aacgactcct agcatcttcg ggaggctcct gaaggactga agcaaaggaa atctctgaag
2760
ggatttagtc cttgaaaggg agtagggata cttagggtgt tctgtgttga gcgcttcttc
2820
ctatctctcc agcttcatgt atgtgtgtct ttatgtccaa gcaattgagc caacaagtcc
2880
tcagaat
2887
```

```
<210> 4858
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<211> 269
<212> PRT
<213> Homo sapiens

<400> 4858
Xaa Gly Arg Arg Gly Gln Met Glu Glu Tyr Glu Glu Glu Pro Ser Arg
1   5   10   15
Gly Trp Trp Arg Leu Gly Ser Ser Ser Gln Ala Ala Cys Leu Lys Gln
            20   25   30
Ile Leu Leu Leu Gln Leu Asp Leu Ile Glu Gln Gln Gln Gln Gln Leu
        35   40   45
Gln Ala Lys Glu Lys Glu Ile Glu Glu Leu Lys Ser Glu Arg Asp Thr
    50   55   60
Leu Leu Ala Arg Ile Glu Arg Met Glu Arg Arg Met Gln Leu Val Lys
65   70   75   80
Lys Asp Asn Glu Lys Glu Arg His Lys Leu Phe Gln Gly Tyr Glu Thr
                85   90   95
Glu Glu Arg Glu Glu Thr Glu Leu Ser Glu Lys Ile Lys Leu Glu Cys
        100   105   110
Gln Pro Glu Leu Ser Glu Thr Ser Gln Thr Leu Pro Pro Lys Pro Phe
        115   120   125
Ser Cys Gly Arg Ser Gly Lys Gly His Lys Arg Lys Ser Pro Phe Gly
    130   135   140
Ser Thr Glu Arg Lys Thr Pro Val Lys Lys Leu Ala Pro Glu Phe Ser
145   150   155   160
Lys Val Lys Thr Lys Thr Pro Lys His Ser Pro Ile Lys Glu Glu Pro
                165   170   175
Cys Gly Ser Leu Ser Glu Thr Val Cys Lys Arg Glu Leu Arg Ser Gln
            180   185   190
Glu Thr Pro Glu Lys Pro Arg Ser Ser Val Asp Thr Pro Pro Arg Leu
        195   200   205
Ser Thr Pro Gln Lys Gly Pro Ser Thr His Pro Lys Glu Lys Ala Phe
    210   215   220
Ser Ser Glu Ile Glu Asp Leu Pro Tyr Leu Ser Thr Thr Glu Met Tyr
225   230   235   240
Leu Cys Arg Trp His Gln Pro Pro Pro Ser Pro Leu Pro Leu Arg Glu
                245   250   255
Ser Ser Pro Lys Lys Glu Glu Thr Val Ala Ser Lys Ala
                260   265

<210> 4859
<211> 689
<212> DNA
<213> Homo sapiens

<400> 4859
cctgctgagg acatgaggac ccgtcttttt gcagtgccag gcagggtggc caaagaggac
60
tggactctgg acctggagcc ccgtggtcca gttcacattc accccacaag agtttcagga
120
ggcctcccac ggtgcctgtg ctgggtggcg gtggtggtgc caagaggaat ggaatgtcct
180
gggctccttc aggagctctc tacccagggg caaggagagc ccagagagaa gcgccctggt
240

```
ctcttgagct tcctgatctg ctcctgtccc ccgctctcct ccactccctt gcctttccct
300
aggttgtccc ctccctgggc ttttgtgtgt tttgggagat gtcacctaac caggacattg
360
atattcaatc ccatccccct tcctcccacc ctgccccact ttgatttaat cctttggctg
420
tgggctgagg cctcccaggg aagttgggtg gggtgggtgt tgagaccccc tcagaccagc
480
acagagacct gtccttgtgc agtctgcacc ctgcactccc tcccttgcct gtagatgttc
540
tggatgacag tagaggaaat ggacaaggtc agtttgaata tcccagaaca cagtgctctg
600
tctcctccca ccagtccagt tagcttccct tctggaccaa tagacgaggg gagaccccat
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ggatcctctg gctgggaagc acctgacca
689
```

<210> 4860
<211> 173
<212> PRT
<213> Homo sapiens

<400> 4860

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Met Arg Thr Arg Leu Phe Ala Val Pro Gly Arg Val Ala Lys Glu Asp
1               5                   10                  15
Trp Thr Leu Asp Leu Glu Pro Arg Gly Pro Val His Ile His Pro Thr
            20                  25                  30
Arg Val Ser Gly Gly Leu Pro Arg Cys Leu Cys Trp Val Ala Val Val
        35                  40                  45
Val Pro Arg Gly Met Glu Cys Pro Gly Leu Leu Gln Glu Leu Ser Thr
    50                  55                  60
Gln Gly Gln Gly Glu Pro Arg Glu Lys Arg Pro Gly Leu Leu Ser Phe
65                  70                  75                  80
Leu Ile Cys Ser Cys Pro Pro Leu Ser Ser Thr Pro Leu Pro Phe Pro
                85                  90                  95
Arg Leu Ser Pro Pro Trp Ala Phe Val Cys Phe Gly Arg Cys His Leu
            100                 105                 110
Thr Arg Thr Leu Ile Phe Asn Pro Ile Pro Leu Pro Pro Thr Leu Pro
        115                 120                 125
His Phe Asp Leu Ile Leu Trp Leu Trp Ala Glu Ala Ser Gln Gly Ser
        130                 135                 140
Trp Val Gly Trp Val Leu Arg Pro Pro Gln Thr Ser Thr Glu Thr Cys
145                 150                 155                 160
Pro Cys Ala Val Cys Thr Leu His Ser Leu Pro Cys Leu
                165                 170
```

<210> 4861
<211> 1622
<212> DNA
<213> Homo sapiens

<400> 4861

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ctgcagactt ccggcggcgc gctgcaggcg cggggaacac caatggcggg gtacttgaag
60
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ctggtgtgtg tttcctttca gcgtcaaggg ttccacactg ttgggagtcg ctgcaagaat
120
cggacaggcg ctgagcacct gtggctgacc cgacatctca gggacccatt tgtgaaggct
180
gcgaaggtgg agagttaccg gtgtcgaagc gccttcaagc tcctggaggt gaacgagagg
240
caccagattc tgcggcccgg ccttcgggtg ttagactgtg gggcagctcc tggggcctgg
300
agtcaggtgg cggtgcagaa ggtcaacgcc gcaggcacag atcccagctc tcctgttggc
360
ttcgtgcttg gggtagatct tcttcacata ttccccctgg aaggagcaac ttttctgtgc
420
cctgctgacg tgactgaccc gagaacctca cagagaatcc tcgaggtgct tcctggcagg
480
agagcagatg tgattctgag cgacatggcg cccaatgcca cagggttccg ggacctcgat
540
catgacaggc tcatcagcct gtgcctgacc cttctcagcg tgaccccaga catcctgcaa
600
cctggggga cattcctttg taaaacctgg gctggaagtc aaagccgtcg gttacagagg
660
agactgacag aggaattcca gaatgtaagg atcatcaaac ctgaagccag caggaaagag
720
tcatcagaag tgtacttctt ggccacacag taccacggaa ggaagggcac tgtgaagcag
780
tgaggatttc ttgtgccatt ttcataatgg tcattagctc cttttaagct agaaacgtag
840
cctgagctcc tgaagagttc ctgggagatt tgagctgatt ttggagatgg agcaggacaa
900
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960
ctaagttcag gggccatgga aaatgaaaaa gtccgctata ttgtgatttg ggaagagaaa
1020
gttatcaaga gaaagaggtg aggatggaag gatggagaaa aacagactgt gggaaggatc
1080
agaaggaatc cgccgaggca gggatgggtg tgcccatgtg tgccttgacg ggacttcatc
1140
ttatagactg ttaaactgtc acacacaaac aggctttcca cccctgctct gagagcacca
1200
cgcacagatt tccagttctt agtgtggctg tttaaagtag aaaatctggg ggctgggtga
1260
ggccactcat gcctgtaaac ccagggcttt agaaggctga ggctggggga ttgcttgaag
1320
tcaggagttc aagaccaacc tgggcaacat agcaacaccc cccatgtcta caaaaatgaa
1380
aaaccaaaaa gcaaaccaaa agaaaaatct gaaatttcca tctggggatt aacttctgtc
1440
tttctggtga acaatatagc aattcacgca ttcttcaagc agcaaaagtt cccggaacaa
1500
ttagggaaga cgtatggtct gaatttatcc aggcagtggg tctgctttgg tttttgctgg
1560
aaatttatat cagtgtctgg gctcccaaga acataaatgt aattgccaaa gcaaaaaaaa
1620
aa
1622
```

<210> 4862
<211> 260
<212> PRT
<213> Homo sapiens

<400> 4862

```
Leu Gln Thr Ser Gly Gly Ala Leu Gln Ala Arg Gly Thr Pro Met Ala
1               5                   10                  15
Gly Tyr Leu Lys Leu Val Cys Val Ser Phe Gln Arg Gln Gly Phe His
            20                  25                  30
Thr Val Gly Ser Arg Cys Lys Asn Arg Thr Gly Ala Glu His Leu Trp
            35                  40                  45
Leu Thr Arg His Leu Arg Asp Pro Phe Val Lys Ala Ala Lys Val Glu
        50                  55                  60
Ser Tyr Arg Cys Arg Ser Ala Phe Lys Leu Leu Glu Val Asn Glu Arg
65                  70                  75                  80
His Gln Ile Leu Arg Pro Gly Leu Arg Val Leu Asp Cys Gly Ala Ala
                85                  90                  95
Pro Gly Ala Trp Ser Gln Val Ala Val Gln Lys Val Asn Ala Ala Gly
            100                 105                 110
Thr Asp Pro Ser Ser Pro Val Gly Phe Val Leu Gly Val Asp Leu Leu
            115                 120                 125
His Ile Phe Pro Leu Glu Gly Ala Thr Phe Leu Cys Pro Ala Asp Val
        130                 135                 140
Thr Asp Pro Arg Thr Ser Gln Arg Ile Leu Glu Val Leu Pro Gly Arg
145                 150                 155                 160
Arg Ala Asp Val Ile Leu Ser Asp Met Ala Pro Asn Ala Thr Gly Phe
                165                 170                 175
Arg Asp Leu Asp His Asp Arg Leu Ile Ser Leu Cys Leu Thr Leu Leu
            180                 185                 190
Ser Val Thr Pro Asp Ile Leu Gln Pro Gly Gly Thr Phe Leu Cys Lys
            195                 200                 205
Thr Trp Ala Gly Ser Gln Ser Arg Arg Leu Gln Arg Arg Leu Thr Glu
        210                 215                 220
Glu Phe Gln Asn Val Arg Ile Ile Lys Pro Glu Ala Ser Arg Lys Glu
225                 230                 235                 240
Ser Ser Glu Val Tyr Phe Leu Ala Thr Gln Tyr His Gly Arg Lys Gly
                245                 250                 255
Thr Val Lys Gln
                260
```

<210> 4863
<211> 355
<212> DNA
<213> Homo sapiens

<400> 4863

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ctggggctc actttcgggt gcacctggtg aagatggtca ttctgacaga gcctgagggt
60
gccccaaata tcacagccaa cctcacctcg tccctgctga gcgtctgtgg gtggagccag
120
accatcaacc ctgaggacga cacggatcct ggccatgctg acctggtcct ctatatcact
180
```

aggtttgacc tggagttgcc tgatggtaac ncggcagtgc ggggcgtcac ccagctgggc
240

ggggcctgct ccccaacctg gagctgcctc attaccgagg acactggctt cgacctggga
300

gtcaccattg cccatgagat tgggcacagc ttcggcctgg agcacgacgg cgcgc
355

<210> 4864
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4864
Leu Gly Ala His Phe Arg Val His Leu Val Lys Met Val Ile Leu Thr
 1   5   10   15
Glu Pro Glu Gly Ala Pro Asn Ile Thr Ala Asn Leu Thr Ser Ser Leu
                20   25   30
Leu Ser Val Cys Gly Trp Ser Gln Thr Ile Asn Pro Glu Asp Asp Thr
            35   40   45
Asp Pro Gly His Ala Asp Leu Val Leu Tyr Ile Thr Arg Phe Asp Leu
        50   55   60
Glu Leu Pro Asp Gly Asn Xaa Ala Val Arg Gly Val Thr Gln Leu Gly
65   70   75   80
Gly Ala Cys Ser Pro Thr Trp Ser Cys Leu Ile Thr Glu Asp Thr Gly
                85   90   95
Phe Asp Leu Gly Val Thr Ile Ala His Glu Ile Gly His Ser Phe Gly
            100   105   110
Leu Glu His Asp Gly Ala
            115

<210> 4865
<211> 444
<212> DNA
<213> Homo sapiens

<400> 4865
accggtgaga agccctacaa atgtgaggtc tgcagcaagg ccttctccca gagctctgac
60

ctcatcaaac accagcgcac ccacactggc gagcggccct acaaatgtcc ccgttgcggc
120

aaggccttcg ccgacagctc ttacctgctt cgccaccagc gcactcactc tggccagaag
180

ccctacaagt gcccacattg tggcaaggcc ttcggcgaca gctcctacct cctgcgacac
240

cagcgcaccc acagccacga gcggccctac agctgcaccg agtgcggcaa gtgctatagc
300

cagaactcgt ccctgcgcag ccatcagagg gtgcacaccg gtcagaggcc cttcagctgt
360

ggcatctgcg gcaagagctt ctcccagcgg tcggccctta tcccccatgc ccgcagccac
420

gcccgggaga agcccttcac gcgt
444

<210> 4866

<210> 148
<212> PRT
<213> Homo sapiens

<400> 4866
Thr Gly Glu Lys Pro Tyr Lys Cys Glu Val Cys Ser Lys Ala Phe Ser
1   5   10   15
Gln Ser Ser Asp Leu Ile Lys His Gln Arg Thr His Thr Gly Glu Arg
            20   25   30
Pro Tyr Lys Cys Pro Arg Cys Gly Lys Ala Phe Ala Asp Ser Ser Tyr
        35   40   45
Leu Leu Arg His Gln Arg Thr His Ser Gly Gln Lys Pro Tyr Lys Cys
    50   55   60
Pro His Cys Gly Lys Ala Phe Gly Asp Ser Ser Tyr Leu Leu Arg His
65   70   75   80
Gln Arg Thr His Ser His Glu Arg Pro Tyr Ser Cys Thr Glu Cys Gly
                85   90   95
Lys Cys Tyr Ser Gln Asn Ser Ser Leu Arg Ser His Gln Arg Val His
            100   105   110
Thr Gly Gln Arg Pro Phe Ser Cys Gly Ile Cys Gly Lys Ser Phe Ser
        115   120   125
Gln Arg Ser Ala Leu Ile Pro His Ala Arg Ser His Ala Arg Glu Lys
    130   135   140
Pro Phe Thr Arg
145

<210> 4867
<211> 391
<212> DNA
<213> Homo sapiens

<400> 4867
ggatcccaga gggagttcta tctggacttg ccccaagcag gttgctaggc agtagcctca
60
tatccttggt gggaggatga gaaggacaaa aagaggcaac cagcctaggg acatcggcct
120
ccttctccac atccccattc tggtaggaaa agtcacccat gccaggatat ccccagccca
180
gagacagccc cagggggtgc tgcctggaga cagccgggat agcttcagtc tcctgaccct
240
gacacgggct gcaccaccag acaatgggca ttttcaggcc agactctggc acaaagagaa
300
ggggcagggc caaggctatg gcccacaagc tcctcagcag ctgagatggg tgcaggaggt
360
agcgctctac tcccatagct ccccactgta t
391

<210> 4868
<211> 125
<212> PRT
<213> Homo sapiens

<400> 4868
Met Gly Val Glu Arg Tyr Leu Leu His Pro Ser Gln Leu Leu Arg Ser

```
     1                5                    10                   15
   Leu Trp Ala Ile Ala Leu Ala Leu Pro Leu Leu Phe Val Pro Glu Ser
               20           25                   30
   Gly Leu Lys Met Pro Ile Val Trp Trp Cys Ser Pro Cys Gln Gly Gln
               35           40                   45
   Glu Thr Glu Ala Ile Pro Ala Val Ser Arg Gln His Pro Leu Gly Leu
          50               55                   60
   Ser Leu Gly Trp Gly Tyr Pro Gly Met Gly Asp Phe Ser Tyr Gln Asn
   65                   70                   75                   80
   Gly Asp Val Glu Lys Glu Ala Asp Val Pro Arg Leu Val Ala Ser Phe
                    85                   90                   95
   Cys Pro Ser His Pro Pro Thr Lys Asp Met Arg Leu Leu Pro Ser Asn
                 100                  105                  110
   Leu Leu Gly Ala Ser Pro Asp Arg Thr Pro Ser Gly Ile
                 115                  120                  125
```

<210> 4869
<211> 418
<212> DNA
<213> Homo sapiens

<400> 4869
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cccgggaaga gggtcgcccg ccataaatgc ggaaacagtt aaatggcgat gggaatagga
60
tgggaactca atggtgttgc tacctttgga tggactcgga ggcagcccag cttcctggga
120
caggactgca cggactgcct ggggaggggt ctttggcccc ccggttcctg cagggggggt
180
cggggaggcc ctgtgagcag ttggtcacag gtgggtccca ttcgatgcga tcctgttcct
240
ccccaacagc cctggagaag ggggacgttg cctgctgtgg ctgcggctgt tttcctggcc
300
tgtgagaggc ggggccagag tggccgttgg gaatctgggt gttgcaaggt gaccacaaac
360
agctctctgg gggaggagga ggaaaatgca attgattttc aggagccttc tgaggtcg
418
```

<210> 4870
<211> 125
<212> PRT
<213> Homo sapiens

<400> 4870
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   Met Ala Met Gly Ile Gly Trp Glu Leu Asn Gly Val Ala Thr Phe Gly
   1                5                    10                   15
   Trp Thr Arg Arg Gln Pro Ser Phe Leu Gly Gln Asp Cys Thr Asp Cys
               20           25                   30
   Leu Gly Arg Gly Leu Trp Pro Pro Gly Ser Cys Arg Gly Ala Arg Gly
               35           40                   45
   Gly Pro Val Ser Ser Trp Ser Gln Val Gly Pro Ile Arg Cys Asp Pro
          50               55                   60
   Val Pro Pro Gln Gln Pro Trp Arg Arg Gly Thr Leu Pro Ala Val Ala
   65                   70                   75                   80
   Ala Ala Val Phe Leu Ala Cys Glu Arg Arg Gly Gln Ser Gly Arg Trp
```

```
                       85                  90                      95
Glu Ser Gly Cys Cys Lys Val Thr Thr Asn Ser Ser Leu Gly Glu Glu
              100                  105                     110
Glu Glu Asn Ala Ile Asp Phe Gln Glu Pro Ser Glu Val
         115                  120                     125
```

<210> 4871
<211> 1354
<212> DNA
<213> Homo sapiens

<400> 4871
nnttttttttt ttttttttttt tttttctaga atccgcttta ttatggcacc tggtgggtct
60
ggtgggatct gagggaggaa gaggctgcag tcttgctggg cagcccctcg gtcagtccag
120
cagccctca ggccatgctg ctgctcagct gcatggcaaa gtcctgcaca tgctccttca
180
gagtctggcg ggcatctgcc tgtgcccgct tctcccgtgc cgctcctgc tgcagcttgg
240
tcagtctcaa ccgcagccgc tgctcccgcc gcttgcaggc ctgcagctgg cgctgggcct
300
tgtcaagggc atcaagggct gcctggctcg ccgcttccag agtaaggcgc tgcccacctg
360
gtagctgtgt tcattctgga tgtaggctcc ggcgggtggg ggcaggcgag catatacgct
420
gagggggaga ctggccgtgg ttcgagaggg gagggctgcc gctctggtga aggctgggcg
480
ctgcagcctg cttcatctgc ctgggcaccc aaggggccca gtaggtctga aaaggggctg
540
ctaaggccag gctccagcct cccagctggg gaggccggca aagtggcagg tgctgaggcc
600
tcttccacag gaaagcaggt gacatcagca ggtggaggtg gagaaaatgg agttgtgggc
660
cctcggccct cggagcagcg cttcctgcat cgtctaagcc ggctgacttc aggggggcca
720
ggtgggtaac tgtgtccttt ggtcttggtt gtccggcgca acttggagaa agactcaaat
780
atggtgggga ctgccccctc ctttagcctg tgatatccac tgattcccac cagctcaaag
840
cagtcctcct caaagtgttt ggagcagaag tagatgtact cggatgccgg gtcccacagg
900
ccctggccgc tggggtccag ccgctggcag ttggccagcc acaagcctcg cctcgggttg
960
tccttcttgg gaagtctgtg gagccacaaa cccgtgagca ccaggctgtc cacagccctg
1020
ggctcatgct gcccaagcac cccagagggg aaacgcagac ccaacacgcg ccgccacgag
1080
acctccctgc gaccccgccg ggtaagcacc accgcccggg cacagacgag gcaacggagg
1140
cctcgagaag aaaagcagtt tcctcagcgt catctggcag gtaacagagt ggggcgggtc
1200
caagccggct agacttcccg tcctcccctt cccgactgca ttcagtcccg ccgggaccgt
1260
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tccgcttcac ctcccaccca caggttcaag cctcctcagt atctgagaaa ggcgcgaagc
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ctctacgcag ttgcgacccg aggcgagcaa caac
1354

<210> 4872
<211> 90
<212> PRT
<213> Homo sapiens

<400> 4872
Gly Arg Lys Arg Leu Gln Ser Cys Trp Ala Ala Pro Arg Ser Val Gln
 1   5   10   15
Gln Pro Leu Arg Pro Cys Cys Cys Ser Ala Ala Trp Gln Ser Pro Ala
                20   25   30
His Ala Pro Ser Glu Ser Gly Gly His Leu Pro Val Pro Ala Ser Pro
                35   40   45
Val Pro Ala Pro Ala Ala Ala Trp Ser Val Ser Thr Ala Ala Ala Ala
        50   55   60
Pro Ala Ala Cys Arg Pro Ala Ala Gly Ala Gly Pro Cys Gln Gly His
65   70   75   80
Gln Gly Leu Pro Gly Ser Pro Leu Pro Glu
                85   90

<210> 4873
<211> 948
<212> DNA
<213> Homo sapiens

<400> 4873
ncccccctag gatgcagaaa gtagatgaca ttccatccac actgtgtgag caaattggag
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agattgcctt gatagaggac tgatgttttt cactgatgag atggtgacca aaagccagcc
120
ccactgtgag ttgaactctt tcgtgttgac cggccactct ccgtgctctg gatgatgtcg
180
gaacacgacc tggccgatgt ggttcaaatt gcagtggaag acctgagccc tgaccaccca
240
ggtacagagc tgtgggacag tgttgttttg gagaatcatg tagtgacaga tgaagacgaa
300
cctgctttga aacgccagcg actagaaatc aattgccagg atccatctat aaagtcattc
360
ctgtattcca tcaaccagac aatctgcttg cggttggata gcattgaagc caaattgcaa
420
gccctggagg ctacttgtaa atccttagaa gaaaagctgg atctggtcac gaacaagcag
480
cacagcccca tccaggttcc catggtggcc ggctcccctc tcaggacaac ccagatgtgc
540
aacaaagtgc gatggtaaga acagaccagg gtgccggggc cttcaggtca cttggggaga
600
agcgcgtcac ctcctcgccc atgcccgcag cttagtggct cagtttgctg gagatgcgca
660
gtgtctgcct cagcagtctc agcagtttct aactaaagct gactttagtt agaccgaaac
720

4052

cgaacacatg gcatcctgcc aggatgacct gaagtcatcc tcacctttcc tttccacata
780

aagccggccc atacaccttt tctttggaac taacccacca gatcttagaa gatgtacacg
840

tgcttctttc cttttttccta ctctacctgg ctagtcttta gatatgtttt tcttcgtatg
900

tggtgtttat acatttcaca tgaatatatc aaacttttca ttcaaaaa
948

<210> 4874
<211> 128
<212> PRT
<213> Homo sapiens

<400> 4874
Met Met Ser Glu His Asp Leu Ala Asp Val Val Gln Ile Ala Val Glu
 1   5   10   15
Asp Leu Ser Pro Asp His Pro Gly Thr Glu Leu Trp Asp Ser Val Val
            20   25   30
Leu Glu Asn His Val Val Thr Asp Glu Asp Glu Pro Ala Leu Lys Arg
        35   40   45
Gln Arg Leu Glu Ile Asn Cys Gln Asp Pro Ser Ile Lys Ser Phe Leu
    50   55   60
Tyr Ser Ile Asn Gln Thr Ile Cys Leu Arg Leu Asp Ser Ile Glu Ala
65   70   75   80
Lys Leu Gln Ala Leu Glu Ala Thr Cys Lys Ser Leu Glu Glu Lys Leu
            85   90   95
Asp Leu Val Thr Asn Lys Gln His Ser Pro Ile Gln Val Pro Met Val
            100   105   110
Ala Gly Ser Pro Leu Arg Thr Thr Gln Met Cys Asn Lys Val Arg Trp
        115   120   125

<210> 4875
<211> 1255
<212> DNA
<213> Homo sapiens

<400> 4875
ntgtacagtc gattccattt ggcccgggga tggtcacacg cgcggggggcc ggaactgccg
60

tcgccggcgc ggtcgttgtc gcattgctct cggccgcact cgcgctgtac gggccgccac
120

tggacgcagt tttagaaaga gcgttttcgc tacgtaaagc acattcgata aaggatatgg
180

aaaatacttt gcagctggtg agaaatatca tacctcctct gtcttccaca aagcacaaag
240

ggcaagatgg aagaataggc gtagttggag gctgtcagga gtacactgga gccccatatt
300

ttgcagcaat ctcagctctc aaagtgggcg cagacttgtc ccacgtgttc tgtgccagtg
360

cggccgcacc tgtgattaag gcctacagcc cggagctgat cgtccaccca gttcttgaca
420

gccccaatgc tgttcatgag gtggagaagt ggctgccccg gctgcatgct cttgtcgtag
480

gacctggctt gggtagagat gatcgtccac ccagttcttg acagccccaa tgctgttcat
540

gaggtggaga agtggctgcc ccggctgcat gctcttgtcg taggaactgg cttgggtaga
600

gatgatgcgc ttctcagaaa tgtccagggc attttggaag tgtcaaaggc cagggacatc
660

cctgttgtca tcgacgcgga tggcctgtgg ctggtcgctc agcagccggc cctcatccat
720

ggctaccgga aggctgtgct cactcccaac cacgtggagt tcagcagact gtatgacgct
780

gtgctcagag ccctatgga cagcgatgac agccatggat ctgtgctaag actcagccaa
840

gccctgggca acgtgacggt ggtccagaaa ggagagcgcg acatcctctc caacggccag
900

caggtgcttg tgtgcagcca ggaaggcagc agccgcaggt gtggagggca aggggacctc
960

ctgtcgggct ccctgggcgt cctggtacac tgggcgctcc ttgctggacc acagaaaaca
1020

aatgggtcca gccctctcct ggtggccgcg tttggcgcct gctctctcac caggcagtgc
1080

aaccaccaag ccttccagaa gcacggtcgc tccaccacca cctccgacat gatcgccgag
1140

gtggggggccg ccttcagcaa gctctttgaa acctgagccc gcgcagacca gaagtaaaca
1200

ggcaccttgg acgggggaga gcgtgtgtgt gatgggaaaa tccggaccca cgcgt
1255

<210> 4876
<211> 230
<212> PRT
<213> Homo sapiens

<400> 4876
Leu Ala Trp Val Glu Met Ile Val His Pro Val Leu Asp Ser Pro Asn
 1   5   10   15
Ala Val His Glu Val Glu Lys Trp Leu Pro Arg Leu His Ala Leu Val
            20   25   30
Val Gly Thr Gly Leu Gly Arg Asp Asp Ala Leu Leu Arg Asn Val Gln
        35   40   45
Gly Ile Leu Glu Val Ser Lys Ala Arg Asp Ile Pro Val Val Ile Asp
    50   55   60
Ala Asp Gly Leu Trp Leu Val Ala Gln Gln Pro Ala Leu Ile His Gly
65   70   75   80
Tyr Arg Lys Ala Val Leu Thr Pro Asn His Val Glu Phe Ser Arg Leu
                85   90   95
Tyr Asp Ala Val Leu Arg Gly Pro Met Asp Ser Asp Asp Ser His Gly
                100   105   110
Ser Val Leu Arg Leu Ser Gln Ala Leu Gly Asn Val Thr Val Val Gln
            115   120   125
Lys Gly Glu Arg Asp Ile Leu Ser Asn Gly Gln Gln Val Leu Val Cys
        130   135   140
Ser Gln Glu Gly Ser Ser Arg Arg Cys Gly Gly Gln Gly Asp Leu Leu
145   150   155   160
Ser Gly Ser Leu Gly Val Leu Val His Trp Ala Leu Leu Ala Gly Pro

4054

```
                    165                170                175
Gln Lys Thr Asn Gly Ser Ser Pro Leu Leu Val Ala Ala Phe Gly Ala
            180                185                190
Cys Ser Leu Thr Arg Gln Cys Asn His Gln Ala Phe Gln Lys His Gly
        195                200                205
Arg Ser Thr Thr Thr Ser Asp Met Ile Ala Glu Val Gly Ala Ala Phe
    210                215                220
Ser Lys Leu Phe Glu Thr
225                230
```

<210> 4877
<211> 1182
<212> DNA
<213> Homo sapiens

<400> 4877

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acttgatctt ggtcactgct ccatgccgga gcctgggaag gagcctggcc caggtcgccg
120
gttcaatgaa tgcgtgcgga atgaatgaac gactctagtg aaagagactc caatgacgca
180
ggccgggatt tgcggacacg agccccgcgc cgcgaagcat tctggggatt gtagtttctc
240
cgtgacgcgg tgactcgcag agcactgacg cactctgcgc ccggaggaca gagcggcccg
300
gtcgccggca tggtttctcc gtcctgctgc agccggcggg aggcagccag tccaggcgcc
360
cgctagcttc ggcggcgacc cagacgggga aagcggaagg aatgtcgcgt gcaagcaggc
420
agctggtgtg gaagaatggc ggtgagccat tcagtgaagg agcggaccat ctctgagaac
480
agcctgatca tcctactgca gggcctccag ggccgggtaa ccactgtgga cctgcgggat
540
gagagcgtgg cccacggacg catagacaat gtcgatgctt tcatgaacat ccgcctggcc
600
aaagtcacct acacggaccg ttggggggcat caggtcaagc tggatgacct ctttgtgaca
660
ggccgcaatg tccgctacgt ccacatccca gatgacgtga acatcacctc gaccattgag
720
cagcagctgc agattatcca tcgggtgcga aactttggtg gcaagggcca aggccggtgg
780
gaatttcccc caaaaaaact gtaagtgagg ccctcagcaa gccctggccc caactcggag
840
tcctccagtg atctccggag ctagttccct gccctcacac cctgtctggt acccgagaag
900
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960
acagggttcc acctcccaga ctcactctgg acccagaat cctatatgtg gccttggggt
1020
aggtgacaat ccccctttt gatgatctga atctctgact tattgattat ggaacctgtc
1080
aagtagtttt caactctccc agtgaggata attaaacatg ctcagcctga gccacctcta
1140
```

```
agtgtctcca tttctcatgc agttgtgttc attttctcat ga
1182
```

```
<210> 4878
<211> 122
<212> PRT
<213> Homo sapiens
```

```
<400> 4878
Met Ala Val Ser His Ser Val Lys Glu Arg Thr Ile Ser Glu Asn Ser
1               5                   10                  15
Leu Ile Ile Leu Leu Gln Gly Leu Gln Gly Arg Val Thr Thr Val Asp
            20                  25                  30
Leu Arg Asp Glu Ser Val Ala His Gly Arg Ile Asp Asn Val Asp Ala
        35                  40                  45
Phe Met Asn Ile Arg Leu Ala Lys Val Thr Tyr Thr Asp Arg Trp Gly
    50                  55                  60
His Gln Val Lys Leu Asp Asp Leu Phe Val Thr Gly Arg Asn Val Arg
65                  70                  75                  80
Tyr Val His Ile Pro Asp Asp Val Asn Ile Thr Ser Thr Ile Glu Gln
                85                  90                  95
Gln Leu Gln Ile Ile His Arg Val Arg Asn Phe Gly Gly Lys Gly Gln
            100                 105                 110
Gly Arg Trp Glu Phe Pro Pro Lys Lys Leu
            115                 120
```

```
<210> 4879
<211> 1941
<212> DNA
<213> Homo sapiens
```

```
<400> 4879
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cgcctaccac gtgaagaggt acagccgggc gcagtttgga gagagactcg tcagagagct
120
gctgggcttg gaggatgcct ctccgaccca ctgatgctgg gggcgcagga ctcggtcaag
180
ggaggggcaa gaggaggagg agagcctgcc gttccaactt gcccatcaga gacccggaca
240
cggcctggtg tgtggcttgc tgcctgggag ggatgcacag ggcctcctga gggacaggat
300
ggacctggtc agaggacggt tgctgtcctc atttgctttc caagaagagc atgtcctccc
360
tcgagaaaca gtgccggcgg tgtgatgagc acttacaccc acgttctcaa gggcagattc
420
tctcatgaca tccgtggagc ttgcgaggca gcgtggactg gtgactgtga aggaaggccc
480
ccgtggtaga atgagctgga gcacgctcta agagagatgc ctgcttccta aagatctaca
540
gcaatctggg acgtggttca agttcaagac ttgaaggaag caaagacgcc ctgcatggtt
600
acaatggctc aggtgtcagg ggaggccgga ggttttccag catttgcctc atgccagcac
660
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ctttgaaccg gtctcttaga agaagacaca catcctgggt gtacagtggt gaaatgggga
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gtgggtgccc attctgaaaa acgaggcatt cctgctcatt ccctctgctt agctggtggg
780
caggggagag agggaaatgc caaaaacttg gagtgaagga tgatgctatt ttttattttt
840
aaatatatct tcaggttatt ttcttactgt tgcttcagat ctaatgtaaa aggcagatgt
900
cccctcctct ccaccccga cgctgacccc ggcctcagtc acggctcttt gcatgatcac
960
agttctgtgt tctggcctgt ggcagggccg ggaagggccg ctggcttccg aacagacgtg
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1200
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1320
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1440
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1620
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1740
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1800
gcttttctac aaggtccact atttctgagt ttaatgtgtt ccaacactt aaggagactc
1860
taatgaaagc tgatgaattt tcttttctgt ccaaacaagt aaaataaaaa taaaagtcta
1920
tttagatgtt gaaaaaaaaa a
1941

<210> 4880
<211> 202
<212> PRT
<213> Homo sapiens

<400> 4880
Met Val Arg Ser Ala His His Ser Gly Thr Glu Ala Ser Leu Glu Thr
 1   5   10   15
His Lys Pro Gly Leu Gly Lys Cys Pro Asp Leu Pro Gly Gly His Thr

4057

```
                20                25                30
Ser Leu Ala Ala Ser Ala Gly His Ala Ala Ser Pro Val Leu Pro Ser
        35                40                45
Ala Thr Ala Ser Gly Pro His Val Lys Ser His Leu Thr Arg Val Val
    50                55                60
Thr Thr Val Leu Phe Trp Gly Phe Ser Lys Ala Ser Pro Val Val Leu
65                70                75                80
Arg Gly His Ser Glu Gln Ala Asn Thr Ala Arg Val Thr His Tyr Thr
                85                90                95
Gln Arg Lys Asp Asn Glu Gln Met Ala Ile Val Glu Asn Ser Val Val
            100               105               110
Cys Phe Ser Asn Ala Thr Tyr Phe Ser Arg Gln Val Ile Leu Pro Met
        115               120               125
Met Thr Ser Ala Thr Lys Leu Arg Ala Arg Gly Leu Pro Met Arg Leu
    130               135               140
Val Glu Ser Asn His Val Cys Ser Glu Ala Ser Gly Pro Ser Arg Pro
145               150               155               160
Cys His Arg Pro Glu His Arg Thr Val Ile Met Gln Arg Ala Val Thr
            165               170               175
Glu Ala Gly Val Ser Val Gly Gly Gly Glu Glu Gly Thr Ser Ala Phe
        180               185               190
Tyr Ile Arg Ser Glu Ala Thr Val Arg Lys
    195               200
```

```
<210> 4881
<211> 1333
<212> DNA
<213> Homo sapiens

<400> 4881
nntttttttt ttacatgtga gtcattcttt attagggagg aagcaagcag ggaagccaca
60
ggggtagaga acagggtcac ctctccactc ccgcccctcc catttctccc ctcccaacct
120
ctaggttttg gatacatgac gcagcaactg atgaacctgg caggaggcgc agtggtgctg
180
gccttggagg gtggccatga cctcacagcc atctgtgacg cctctgaggc ctgtgtggct
240
gctcttctgg gtaacagggt gagccgtctc cctcccccat ccatgcttct gtcaggcagg
300
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360
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420
gcatctcctg gcctaggtag agtgtgcttg tggctagaag gctggggccc ctggggtggg
480
agtgagctgg gcctgtgggt ccctgaaaga ctggtggctg atgtactgtt ttctataggt
540
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600
ggaggccgtg atccgggtgc acagtaagtg tggagatggg acactcgctg agctcagact
660
gaaggatctt ggtggtaccc tgccccaccg tggccagatc ctagggcttc cggtgccagc
720
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4058

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caggtgacct gctgttggtc tggagtaaga ttcctgtgag tgacccaggc agcaatggta
780
aatactgggg ctgcatgcag cgcctggcct cctgtccaga ctcctgggtg cctagagtgc
840
caggggctga caaagaagaa gtggaggcag tgaccgcact ggcgtccctc tctgtgggca
900
tcctggctga agataggtaa tgccagacnc tgggccctgg gcccgcagcc tctccaccgc
960
ttcattcctc cctgcttgaa gaccccgggt ccgctatgca gccaccccaa ccctcccagg
1020
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1080
agcatcccac ccttgtccct ccccacaggc cctcggagca gctggtggag gaggaagaac
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1200
ctcttctaac ccctggcaat agcccccatt cctgggtctt tagagatcct gtgggcaagt
1260
agttggaacc agagaacagc ctgcctgctt tgacagttat cccagggagc gtgagaaaat
1320
ccctgggtct aga
1333


<210> 4882
<211> 100
<212> PRT
<213> Homo sapiens


<400> 4882
Xaa Phe Phe Phe Thr Cys Glu Ser Phe Phe Ile Arg Glu Glu Ala Ser
 1               5                   10                  15
Arg Glu Ala Thr Gly Val Glu Asn Arg Val Thr Ser Pro Leu Pro Pro
            20                  25                  30
Leu Pro Phe Leu Pro Ser Gln Pro Leu Gly Phe Gly Tyr Met Thr Gln
        35                  40                  45
Gln Leu Met Asn Leu Ala Gly Gly Ala Val Val Leu Ala Leu Glu Gly
    50                  55                  60
Gly His Asp Leu Thr Ala Ile Cys Asp Ala Ser Glu Ala Cys Val Ala
65                  70                  75                  80
Ala Leu Leu Gly Asn Arg Val Ser Arg Leu Pro Pro Pro Ser Met Leu
                85                  90                  95
Leu Ser Gly Arg
            100


<210> 4883
<211> 1371
<212> DNA
<213> Homo sapiens


<400> 4883
nnagatctaa cagagaacct ggactgtctc ctatcatgat tcccgggaaa tatcgctctg
60
tttctggccg ggctgcgaac aacgtgaact gcgggcttca tctggttatt caaacatcat
120
```

4059

cgcttcctga aaaaaacaaa acaaaagctg accgtatgtc ctatcatcaa tggggaagac
180
caccttcgtt tgttgaactt tcaacacaat tttataactc ggatacaaaa tatttctaat
240
ctacagaagt taatatcgtt ggatttatat gataaccaga ttgaagaaat tagtgggctt
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tcgactctga gatgtcttcg tgtccttctg ttggggaaaa acagaatcaa gaaaatctca
360
aatctggaga atctaaaaag cttagatgtc ttggatcttc atggaaatca gattaccaaa
420
attgaaaata ttaatcattt gtgtgagttg agagtttaa atcttgccag gaacttttta
480
agtcatgttg ataatcttaa tgggctggat tcactaactg aacttaactt gcgacacaat
540
caaatcactt tcgtgagaga tgtggataat ttgccctgcc tccaacatct ctttctcagc
600
tttaacaata tatctagttt tgacagtgtt tcctgccttg ctgactcttc ttccctctcg
660
gacatcacct ttgatggcaa tcccatagct caagagtcat ggtacaaaca cactgtcctt
720
cagaatatga tgcagctgcg ccagctagat atgaagagaa tcacggaaga agaaaggcgt
780
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840
ttgcttaagg agaagaaaag gttaacaatt aacaacgtag ctcgacagtg ggacttgcaa
900
caacgagtag ccaatattgc tacaaatgaa gatagaaaag attctgactc tcctcaggac
960
ccctgtcaga ttgatggaag caccctctct gcattcccag aggaaacagg gcctctagac
1020
tcaggactca acaatgcttt acaaggttta tctgtcatag acacatacct tgttgaagtg
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1140
agtgttcaaa cagcaggaat gatcacaaca gtctccttca ctttcataga atttgatgaa
1200
atcgtccaag tgcttcctaa actgaagatt aagtttccta attctctgca ccttaaattc
1260
aaggaaacaa atcttgtaat gcagcaattt aacgcactag cccaactccg tcggtattga
1320
ccagttggac aattgatcct caaggaaatc cagttggtcc attttaacac t
1371

<210> 4884<211> 410
<212> PRT
<213> Homo sapiens

<400> 4884
Thr Ala Gly Phe Ile Trp Leu Phe Lys His His Arg Phe Leu Lys Lys
1   5   10   15
Thr Lys Gln Lys Leu Thr Val Cys Pro Ile Ile Asn Gly Glu Asp His
                20   25   30
Leu Arg Leu Leu Asn Phe Gln His Asn Phe Ile Thr Arg Ile Gln Asn
            35   40   45

```
Ile Ser Asn Leu Gln Lys Leu Ile Ser Leu Asp Leu Tyr Asp Asn Gln
    50                  55                  60
Ile Glu Glu Ile Ser Gly Leu Ser Thr Leu Arg Cys Leu Arg Val Leu
65                  70                  75                  80
Leu Leu Gly Lys Asn Arg Ile Lys Lys Ile Ser Asn Leu Glu Asn Leu
                85                  90                  95
Lys Ser Leu Asp Val Leu Asp Leu His Gly Asn Gln Ile Thr Lys Ile
                100                 105                 110
Glu Asn Ile Asn His Leu Cys Glu Leu Arg Val Leu Asn Leu Ala Arg
                115                 120                 125
Asn Phe Leu Ser His Val Asp Asn Leu Asn Gly Leu Asp Ser Leu Thr
    130                 135                 140
Glu Leu Asn Leu Arg His Asn Gln Ile Thr Phe Val Arg Asp Val Asp
145                 150                 155                 160
Asn Leu Pro Cys Leu Gln His Leu Phe Leu Ser Phe Asn Asn Ile Ser
                165                 170                 175
Ser Phe Asp Ser Val Ser Cys Leu Ala Asp Ser Ser Ser Leu Ser Asp
                180                 185                 190
Ile Thr Phe Asp Gly Asn Pro Ile Ala Gln Glu Ser Trp Tyr Lys His
                195                 200                 205
Thr Val Leu Gln Asn Met Met Gln Leu Arg Gln Leu Asp Met Lys Arg
    210                 215                 220
Ile Thr Glu Glu Glu Arg Arg Met Ala Ser Val Leu Ala Lys Lys Glu
225                 230                 235                 240
Glu Glu Lys Lys Arg Glu Ser His Lys Gln Ser Leu Leu Lys Glu Lys
                245                 250                 255
Lys Arg Leu Thr Ile Asn Asn Val Ala Arg Gln Trp Asp Leu Gln Gln
                260                 265                 270
Arg Val Ala Asn Ile Ala Thr Asn Glu Asp Arg Lys Asp Ser Asp Ser
    275                 280                 285
Pro Gln Asp Pro Cys Gln Ile Asp Gly Ser Thr Leu Ser Ala Phe Pro
    290                 295                 300
Glu Glu Thr Gly Pro Leu Asp Ser Gly Leu Asn Asn Ala Leu Gln Gly
305                 310                 315                 320
Leu Ser Val Ile Asp Thr Tyr Leu Val Glu Val Asp Gly Asp Thr Leu
                325                 330                 335
Ser Leu Tyr Gly Ser Gly Ala Leu Glu Ser Leu Asp Arg Asn Trp Ser
                340                 345                 350
Val Gln Thr Ala Gly Met Ile Thr Thr Val Ser Phe Thr Phe Ile Glu
    355                 360                 365
Phe Asp Glu Ile Val Gln Val Leu Pro Lys Leu Lys Ile Lys Phe Pro
    370                 375                 380
Asn Ser Leu His Leu Lys Phe Lys Glu Thr Asn Leu Val Met Gln Gln
385                 390                 395                 400
Phe Asn Ala Leu Ala Gln Leu Arg Arg Tyr
                405                 410
```

<210> 4885
<211> 489
<212> DNA
<213> Homo sapiens

<400> 4885

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120
agagaactgg accttgctca gagagtcttg tacagggatg taatgctgga gaactatagg
180
aacctggtct ccttggtagg atttccattt tccaaacctg gtatcatctc ctagttggaa
240
gaagtggtaa gcccacgaac acaaatgcag gagggagagg tgccaagaag cagcggtaca
300
cgagaaagac agggctggag accagtttgc tgatagtgac ccccaaccag aaaagttcat
360
tgggctgcac cctccagtag aactggacct gaggcagcta ggaataggat gcatgtttct
420
gaccctggcc aggatcagaa agaaggaaac ctctcctgag ggtcttcagc agtggaagag
480
ggcagtcag
489

<210> 4886
<211> 77
<212> PRT
<213> Homo sapiens

<400> 4886
Leu Lys Lys Glu Asn Met Ala Ala Leu Cys Arg Thr Ala Glu Ser Gln
 1   5   10   15
Asn Pro Met Gln Val Phe Gln Gly Phe Met Ser Phe Lys Asp Val Ala
             20   25   30
Val Asn Phe Thr Arg Xaa Glu Trp Arg Glu Leu Asp Leu Ala Gln Arg
         35   40   45
Val Leu Tyr Arg Asp Val Met Leu Glu Asn Tyr Arg Asn Leu Val Ser
     50   55   60
Leu Val Gly Phe Pro Phe Ser Lys Pro Gly Ile Ile Ser
65   70   75

<210> 4887
<211> 2271
<212> DNA
<213> Homo sapiens

<400> 4887
nntttttttt tttttttttc aaagggacac ctgcaccccc atgtttattg cagcaatatt
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cacaatagcc ttgtagtttt agcgcttaga ggcatttaaa cagcctctct cctccagact
120
acttcactgt agtttattat ccctgaccct ccacaatgtg attaccaacc gctaggatga
180
gttgcatctt attataaagt agcaaattac aagattgtaa cattagactt tttaagaaaa
240
tccagtcagc ttttatacta atccatctta atttctaggt tactcagaat tccaggtatt
300
ctgatttgga ctcacatctc gtattgtatt gcctgtattt aactaggaag ttactgccaa
360

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cagcatctat ctctattaaa tgtagaggaa ttgacaaaag aggggaaaga aagttgttag
420
gtaatagaac tgcttcagaa atagggctat tcatgtttga agtgtttctc cttcgttttt
480
cagggcatct cattgggaga tattcctctt ccaggcagta tcagtgatgg catgaattct
540
tcagcacatt atcatgtaaa cttcagccag gctataagtc aggatgtgaa tcttcatgag
600
gccatcttgc tttgtcccaa caatacattt agaagagatc caacagcaag gacttcacag
660
tcacaagaac catttctgca gttaaattct cataccacca atcctgagca aacccttcct
720
ggaactaatt tgacaggatt tctttcaccg gttgacaatc atatgaggaa tctaacaagc
780
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900
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960
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1020
catcatgact tagaaggtgc tgtaggtggc tactacccag aacccagtaa gctttgtcac
1080
ttggatcaaa gtgattctga tttccatgga gatcttacat ttcaacacgt atttcataac
1140
cacacttacc acttacagcc aactgcacca gaatctactt ctgacncttt tccgnntgct
1200
gggaagtcac agaagataag gagtagatac cttgaagacc cagatagaac cttaagccgt
1260
gatgaccagc gtgctaaagc tttgcatatc ccttttttctg tagatgaaat tgtcggcatg
1320
cctgttgatt ctttcaatag catgttaagt agatattatc tgacagacct acaagtctca
1380
cttatccgtg acatcagacg aagagggaaa aataaagttg ctgcgcagaa ctgtcgtaaa
1440
cgcaaattgg acataatttt gaatttagaa gatgatgtat gtaacttgca agcaaagaag
1500
gaaactctta agagagagca agcacaatgt aacaaagcta ttaacataat gaaacagaaa
1560
ctgcatgacc tttatcatga tatttttagt agattaagag atgaccaagg taggccagtc
1620
aatcccaacc actatgctct ccagtgtacc catgatggaa gtatcttgat agtacccaaa
1680
gaactggtgg cctcaggcca caaaaaggaa acccaaaagg gaaagagaaa gtgagaagaa
1740
actgaagatg gactctatta tgtgaagtag taatgttcag aaactgatta tttggatcag
1800
aaaccattga aactgcttca agaattgtat ctttaagtac tgctacttga ataactcagt
1860
taacgctgtt ttgaagctta catggacaaa tgtttaggac ttcaagatca cacttgtggg
1920
caatctgggg gagccacaac tttttcatgaa gtgcattgta tacaaaattc atagttatgt
1980
```

4063

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ccaaagaata ggttaacatg aaaacccagt aagactttcc atcttggcag ccatcctttt
2040
taagagtaag ttggttactt caaaaagagc aaacactggg gatcaaatta ttttaagagg
2100
tatttcagtt ttaaatgcaa aatagcctta ttttcattta gtttgttagc actatagtga
2160
gctttttcaaa cactatttta atctttatat ttaacttata aattttgctt tctatggaaa
2220
taaattttgt atttgtatta aaaattaact tttcccttct aaaaaaaaaa a
2271
```

```
<210> 4888
<211> 429
<212> PRT
<213> Homo sapiens
```

```
<400> 4888
Gly Tyr Ser Cys Leu Lys Cys Phe Ser Phe Val Phe Gln Gly Ile Ser
 1               5                  10                  15
Leu Gly Asp Ile Pro Leu Pro Gly Ser Ile Ser Asp Gly Met Asn Ser
            20                  25                  30
Ser Ala His Tyr His Val Asn Phe Ser Gln Ala Ile Ser Gln Asp Val
            35                  40                  45
Asn Leu His Glu Ala Ile Leu Leu Cys Pro Asn Asn Thr Phe Arg Arg
    50                  55                  60
Asp Pro Thr Ala Arg Thr Ser Gln Ser Gln Glu Pro Phe Leu Gln Leu
65                  70                  75                  80
Asn Ser His Thr Thr Asn Pro Glu Gln Thr Leu Pro Gly Thr Asn Leu
                85                  90                  95
Thr Gly Phe Leu Ser Pro Val Asp Asn His Met Arg Asn Leu Thr Ser
            100                 105                 110
Gln Asp Leu Leu Tyr Asp Leu Asp Ile Asn Ile Phe Asp Glu Ile Asn
            115                 120                 125
Leu Met Ser Leu Ala Thr Glu Asp Asn Phe Asp Pro Ile Asp Val Ser
    130                 135                 140
Gln Leu Phe Asp Glu Pro Asp Ser Asp Ser Gly Leu Ser Leu Asp Ser
145                 150                 155                 160
Ser His Asn Asn Thr Ser Val Ile Lys Ser Asn Ser Ser His Ser Val
                165                 170                 175
Cys Asp Glu Gly Ala Ile Gly Tyr Cys Thr Asp His Glu Ser Ser Ser
            180                 185                 190
His His Asp Leu Glu Gly Ala Val Gly Gly Tyr Tyr Pro Glu Pro Ser
    195                 200                 205
Lys Leu Cys His Leu Asp Gln Ser Asp Ser Asp Phe His Gly Asp Leu
    210                 215                 220
Thr Phe Gln His Val Phe His Asn His Thr Tyr His Leu Gln Pro Thr
225                 230                 235                 240
Ala Pro Glu Ser Thr Ser Asp Xaa Phe Pro Xaa Ala Gly Lys Ser Gln
            245                 250                 255
Lys Ile Arg Ser Arg Tyr Leu Glu Asp Pro Asp Arg Thr Leu Ser Arg
            260                 265                 270
Asp Asp Gln Arg Ala Lys Ala Leu His Ile Pro Phe Ser Val Asp Glu
    275                 280                 285
Ile Val Gly Met Pro Val Asp Ser Phe Asn Ser Met Leu Ser Arg Tyr
```

```
          290                    295                    300
Tyr Leu Thr Asp Leu Gln Val Ser Leu Ile Arg Asp Ile Arg Arg Arg
305                    310                    315                    320
Gly Lys Asn Lys Val Ala Ala Gln Asn Cys Arg Lys Arg Lys Leu Asp
                   325                    330                    335
Ile Ile Leu Asn Leu Glu Asp Asp Val Cys Asn Leu Gln Ala Lys Lys
                   340                    345                    350
Glu Thr Leu Lys Arg Glu Gln Ala Gln Cys Asn Lys Ala Ile Asn Ile
              355                    360                    365
Met Lys Gln Lys Leu His Asp Leu Tyr His Asp Ile Phe Ser Arg Leu
         370                    375                    380
Arg Asp Asp Gln Gly Arg Pro Val Asn Pro Asn His Tyr Ala Leu Gln
385                    390                    395                    400
Cys Thr His Asp Gly Ser Ile Leu Ile Val Pro Lys Glu Leu Val Ala
                   405                    410                    415
Ser Gly His Lys Lys Glu Thr Gln Lys Gly Lys Arg Lys
              420                    425
```

```
<210> 4889
<211> 619
<212> DNA
<213> Homo sapiens

<400> 4889
nntgttttc actttattat acaaaaaagg gaaaacaaaa cttccacagt tggctttaag
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cataggcaga cacctctaag ccactccctc ccacctccca tgatacaaat tcaagttgtg
120
gtggttgttg aatcctacaa aacactcctt aaatattaga aaagaagtta ggagctccca
180
gcacatttct tgaagcccag gttctgagcc tggggtggcc aggcttggcc tctcagatga
240
acagggaga cctttccat caaatacaag ctttaagctt cacaccatct tgcctgcctt
300
tccgccttcc tgctggacaa tggagaccag cagctcggat gcatgtgact ctggcagagg
360
gagcctggtc tgggaagcat ccgagaatgg cttcagcaca ctcccctaa tggaatcaga
420
gactgggcaa aacagaggat gtggagaacg gggcagcctc agcctgctcc caccagggtc
480
aacatctccc ggccctcacc gacccttttt ccagattcac aacaaactga tgtgggctct
540
aggacagacc cctttacaca cacacacaca cactcacact cttttgcaca catccacagc
600
tgcacccatg ctatgtaca
619
```

```
<210> 4890
<211> 90
<212> PRT
<213> Homo sapiens

<400> 4890
Leu Trp Gln Arg Glu Pro Gly Leu Gly Ser Ile Arg Glu Trp Leu Gln
```

```
  1                5                    10                   15
His Thr Pro Pro Asn Gly Ile Arg Asp Trp Ala Lys Gln Arg Met Trp
            20                   25                   30
Arg Thr Gly Gln Pro Gln Pro Ala Pro Thr Arg Val Asn Ile Ser Arg
        35                   40                   45
Pro Ser Pro Thr Leu Phe Pro Asp Ser Gln Gln Thr Asp Val Gly Ser
    50                   55                   60
Arg Thr Asp Pro Phe Thr His Thr His Thr His Ser His Ser Phe Ala
65                   70                   75                   80
His Ile His Ser Cys Thr His Ala Met Tyr
            85                   90
```

<210> 4891
<211> 1998
<212> DNA
<213> Homo sapiens

<400> 4891

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60
cttgacaatt ctcatccatc acacagccaa caatgcacag gcccaccaga actttggac
120
aatcaccgcc ccgccctccc tcaatgtctc cgaggcaggt gcggccacag ccggtgctgc
180
agcatttatg cccctgggga caggatgcat ccccatcaca cagctcctca cacggaaggg
240
ggtcagcggg acattcacca ccaaactcct taggaatgtc tcggcagatc cgaccacagc
300
ctgtggtgca gcacttctgt tcagccggac acaattcatc gccctggcac agctctttgc
360
atgggttctt atcgggaggg cattctccct cttttgaagg cctctaagtg taactgtcct
420
gggcgaggcg cggcggttcg gttcccatgg taaccccgca gctccagcgt cgcgcttccg
480
ggcggacgag cagcgcgctc cagtgacgtc acggcgccac tttccggccg gtgacagagt
540
ccagcggagt tgtgggggcc gggggcgcca tgggagccac tggcgacgcc gagcagccgc
600
ggggacctag cggggccgag aggggcggct tggagctggg ggatgcgggc gcagcggggc
660
agctggttct tacggtgagg gcgcccccga acccttggaa cataatgata aagcaccggc
720
aggtgcagcg gaggggccgc cgctcacaga tgacaacaag tttcacagat cctgccatct
780
ccatggatct cctccgagct gtcctgcagc ccagcatcaa cgaggagatc cagactgtct
840
tcaacaagta cataaagttc ttccagaagg cagcactgaa cgtgcgagac aatgttgggg
900
aggaggtgga cgcagagcag ctgatccagg aagcctgtcg gagctgcctg gagcaggcta
960
naactgctct tttcagatgg agaaaaagta atacccagat tgacccatga gcttccagga
1020
ataaagcgtg gccgtcaggc agaagaagaa tgtgcccatc gaggaagccc ccttcctaaa
1080
```

aagaggaaag gacggcctcc tggacacatc ctgtcaagcg accgggcagc cgccggcatg
1140
gtatggaaac caaaatcctg tgaaccaatt cgccgggaag gccccaagtg ggacccagct
1200
cgcctgaatg aatctaccac ctttgtgttg ggatctcgag ccaacaaagc cctggggatg
1260
gggggcacca gaggaagaat ctacatcaag cacccacacc tctttaagta tgcagctgac
1320
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1380
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1440
tgcctggatc tgaagctaga ggaattgaaa tcctttgtcc taccctcctg gatggtggag
1500
aagatgagaa agtatatgga gacactacgg acagagaatg agcatcgtgc tgttgaagca
1560
cctccacaga cctgaggccg ggtcccctgg ccacacttgg cagccctcct ccaaagccct
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1740
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1800
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1860
gtgggtgtag gaaaaaagga cgagataacc ctcacccata acagtataga gccaggcttg
1920
ataagaccaa cctgggagca ccatgtaccc tgcccgtctt ccctttgccc atttgtagtt
1980
tccttaccca gctaatgt
1998

<210> 4892
<211> 216
<212> PRT
<213> Homo sapiens

<400> 4892
Ser Arg Lys Pro Val Gly Ala Ala Trp Ser Arg Leu Xaa Leu Leu Phe
 1   5   10   15
Ser Asp Gly Glu Lys Val Ile Pro Arg Leu Thr His Glu Leu Pro Gly
                20   25   30
Ile Lys Arg Gly Arg Gln Ala Glu Glu Glu Cys Ala His Arg Gly Ser
        35   40   45
Pro Leu Pro Lys Lys Arg Lys Gly Arg Pro Pro Gly His Ile Leu Ser
    50   55   60
Ser Asp Arg Ala Ala Ala Gly Met Val Trp Lys Pro Lys Ser Cys Glu
65   70   75   80
Pro Ile Arg Arg Glu Gly Pro Lys Trp Asp Pro Ala Arg Leu Asn Glu
                85   90   95
Ser Thr Thr Phe Val Leu Gly Ser Arg Ala Asn Lys Ala Leu Gly Met
                100   105   110
Gly Gly Thr Arg Gly Arg Ile Tyr Ile Lys His Pro His Leu Phe Lys

```
          115                    120                    125
Tyr Ala Ala Asp Pro Gln Asp Lys His Trp Leu Ala Glu Gln His His
      130                    135                    140
Met Arg Ala Thr Gly Gly Lys Met Ala Tyr Leu Leu Ile Glu Glu Asp
145                    150                    155                    160
Ile Arg Asp Leu Ala Ala Ser Asp Asp Tyr Arg Gly Cys Leu Asp Leu
              165                    170                    175
Lys Leu Glu Glu Leu Lys Ser Phe Val Leu Pro Ser Trp Met Val Glu
          180                    185                    190
Lys Met Arg Lys Tyr Met Glu Thr Leu Arg Thr Glu Asn Glu His Arg
          195                    200                    205
Ala Val Glu Ala Pro Pro Gln Thr
      210                    215
```

<210> 4893
<211> 5212
<212> DNA
<213> Homo sapiens

<400> 4893

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120
cagctcagag gtgttcagaa cccttgccca tctgccagag ccagaccccg gcacaagtcc
180
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240
cccagcagga gagcagacgg acaggaggat tatctgccgt cctctacggt ggagaggagg
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360
gagagcacag agaaggagag gaataaagga gcagtgaacg tcgggggaca ggacccagag
420
ccggggcaag acctaagcca gccagaacgg gaagtggatc ctagctgggg ccgaggccga
480
gagccaagac ttggcaagct gcgctttcag aacgatcacc tctccgtgct gaagcaggtc
540
aagaaactcg agcaggcttt gaaggatggg tcggcagggc tggatcccca gttaccaggg
600
acttgttact ccccacactg ccctcctgac aaggcagagg cagggtccac ccttcctgag
660
aacctgggag gcgggagtgg ctcagaagtc agccagaggg tccacccctc ggacctggaa
720
ggcagggagc ccaccctga gcttgtggag gacaggaaag gttcatgcag aaggccctgg
780
gaccggagcc ttgagaacgt gtatagggc tcggagggtt cccccacaaa gcccttcatc
840
aaccctctgc caaaaccccg gagaacgttc aaacatgccg gagaagggga caaagatggg
900
aagcctggca tcggcttcag gaaagagaaa agaaatctgc ctcctctgcc ctctctacct
960
cccccgcctc tgccctcctc tcccccacct tcctctgtga acagaagact gtggaccggg
1020
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agacagaaat ccagtgcaga ccacagaaag tcctatgagt ttgaagattt actgcagtct
1080
tcctctgaga gcagcagggt ggactggtac gcgcagacta agctggggct gacacgcact
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gaggacatcg agttacatgg tcgctgcctg ggaaagaagn ntgtgtcttg aattttcctg
1260
cttctcccac ctncttccat ccctgacaca ctcaccaagc agtcattgtc caaacctgct
1320
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1380
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1920
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1980
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gaagtttact gcattgtgag ccgcctggga tgcttcagcc tcttttcaag gatcttggat
2100
gaggtggaaa aaagacgagg catctctcct gccctggttc agccactcat gagaagtgtc
2160
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2280
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2340
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2400
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2520
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2580
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2640
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2700

cccctagacg gcaggcacgg tccagagtcc agccccttga acgaggtggt gtctgaagcc
2760

tttgtccgct tcttcgtgga gattgtggga cactactctt tgttcctgac gtcgggcgag
2820

cgtgaggaga gaaccctgca gcgggaggcc ttccgcaaag ctgtctcctc caagagcctc
2880

cgccacttcc tggaggtctt catggagact cagatgtttc ggggcttcat ccaggagcgg
2940

gagctgcgcc ggcaggatgc caaaggtctg tttgaggtcc gagcccaaga gtatctggaa
3000

acactcccca gtggagagca cagcggtgtc aataagttcc tgaagggact aggcaataaa
3060

atgaaatttc tccacaagaa ataactctca gcctcaaggg aaaacttcct cctagtgcag
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ccctatgctt taaaaacagt tcctggtggc ctttctgaaa ggctgggtcc caggttgtca
3180

cggtgcggaa ctggaggccg cggtggcttc tggccgaggc tgggctcttc cctggatgag
3240

gacctgggag ccgcctggga ggacagcccc agaaagggag cccgagacca ggcgtgtcgc
3300

cgacatgcaa atgggttgtt ttggtggttg ggtttttttt tttatcttag atattaaaag
3360

taagaaaaat gtgtgggttt tctgtttatt atgccaaggc caagaggagc ctgtcctgcc
3420

ctacacgttc ccctcgttcg tcccatccgg ccgctcagca atggagctaa gaggagtggt
3480

gatgggcaac agaaatgagg tgctcctcgg agcgggactg acgacacatg aggactgtga
3540

ggggaggagg cggagccggt gcctcgggtt cagggagtga ggcctcctag tgaaaggctg
3600

ggcccttgcc ctagagtgga ggctagggag gaacgggagc tgtagacgga tgtggcttcc
3660

cagacacgct gctcttccag aagggacagt gatgccacct ggtggccgag gccatggacg
3720

tctctcttcc caaatggacc tgactcttct tgactgcctt gttctcttag aagaagccat
3780

ggaactgtcc actgcctgag tagtccctgg cttttagagg cacacacaca aaaagaggtc
3840

agtaaactgt tctaggggtc ttcaagttta cgacactgct cacggcccac cttccaacac
3900

atagccacaa ctttgacccc gttcccatct cattccaggg gcccagagca gcattaatgc
3960

aatagtggat gtgcactgcc tgtacacggt ggggggcggg gggacctttt gcggctgatg
4020

gtaacaagat ggagggtgag aacgctgggg cggcgtcatg agccgtgtgc agccagagag
4080

gcagcttgcg ttttctggac cagaagcagg gagggtgtgg agaaggccaa aaacctcagg
4140

gcgacctaag agctgtcctg cagcggggac agtggggaca gcagggacag cggggaggca
4200

ggaaaagccc cgaacacagc tgaggcaggt tctcagagca agcctcaggg ccactaccag
4260

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gtgacccctg ccctcagctc tcaccagcga ccctcacaga aacacaaaag ggaggggcgc
4320
cgacctcaac aatggcccag aggggccata ctgcctggca ggggttctca acctttaggg
4380
agcgggagca aggggccttc cgaggataaa tagaaatgag gaaaatgagg ggaggtgacc
4440
tctcatcctt cctcttagct ggagttatgg accccctcgc ccctccaagt tctacccagg
4500
ctttggtgtg tccattactt tttcagaggt gaagatccac agtttacatc aaattctcaa
4560
agatgctccc agaatggtag aaaccaggct gtgcataaaa attaacctgc ctggctgggc
4620
gcggtgactc acacctgtaa tctcagcact ttgagaggcc aaggcaggtg ggtggatcac
4680
ttgaggtcag gagttcgagg ccagcctggc caacatggca aaactccgtc tgtactaaaa
4740
atacaagaaa aacttagcca gccatggtgg tgcgtgcctg ttatcccaac tacctggaag
4800
gctgaggcag aagaatcgct tgaactgggg aggagaaggt tgcagtgagc cgagatcatg
4860
ccactgcact ccagcctgga caacagagca agactccttc tcaaaaaaac tctggctggg
4920
tgtgtgtggg tggggactag ggggatgcct gaatgagaat ccctgaatcc ttgagtgtgg
4980
gggttcagga atatgtatct aacaagctcc ttggattagt caagtttgtg tgggggctca
5040
ggaatatatg tatctagcaa gctcctcaga ctagtcaact ttcttaatag tctgcatatt
5100
tgtatattgc ccagaaaggg acactttttg gaatatactt tcttttttttt aacttatttc
5160
gcattatatt gtttacttaa taactccaag caaataaatg tacatcttta tc
5212


<210> 4894
<211> 399
<212> PRT
<213> Homo sapiens

<400> 4894
Met Asp Met Phe Ser Leu Asp Met Ile Ile Ser Asp Pro Ala Ala Glu
1               5                   10                  15
Ala Ser Arg Ala Gly Lys Lys Gln Leu Arg Gly Val Gln Asn Pro Cys
            20                  25                  30
Pro Ser Ala Arg Ala Arg Pro Arg His Lys Ser Leu Asn Ile Lys Asp
            35                  40                  45
Lys Ile Ser Glu Trp Glu Gly Lys Lys Glu Val Pro Thr Pro Ala Pro
        50                  55                  60
Ser Arg Arg Ala Asp Gly Gln Glu Asp Tyr Leu Pro Ser Ser Thr Val
65                  70                  75                  80
Glu Arg Arg Ser Ser Asp Gly Val Arg Thr Gln Val Thr Glu Ala Lys
                85                  90                  95
Asn Gly Met Arg Pro Gly Thr Glu Ser Thr Glu Lys Glu Arg Asn Lys
            100                 105                 110
Gly Ala Val Asn Val Gly Gly Gln Asp Pro Glu Pro Gly Gln Asp Leu
```

```
           115                      120                      125
Ser Gln Pro Glu Arg Glu Val Asp Pro Ser Trp Gly Arg Gly Arg Glu
       130                      135                      140
Pro Arg Leu Gly Lys Leu Arg Phe Gln Asn Asp His Leu Ser Val Leu
145                      150                      155                      160
Lys Gln Val Lys Lys Leu Glu Gln Ala Leu Lys Asp Gly Ser Ala Gly
               165                      170                      175
Leu Asp Pro Gln Leu Pro Gly Thr Cys Tyr Ser Pro His Cys Pro Pro
               180                      185                      190
Asp Lys Ala Glu Ala Gly Ser Thr Leu Pro Glu Asn Leu Gly Gly Gly
       195                      200                      205
Ser Gly Ser Glu Val Ser Gln Arg Val His Pro Ser Asp Leu Glu Gly
   210                      215                      220
Arg Glu Pro Thr Pro Glu Leu Val Glu Asp Arg Lys Gly Ser Cys Arg
225                      230                      235                      240
Arg Pro Trp Asp Arg Ser Leu Glu Asn Val Tyr Arg Gly Ser Glu Gly
               245                      250                      255
Ser Pro Thr Lys Pro Phe Ile Asn Pro Leu Pro Lys Pro Arg Arg Thr
               260                      265                      270
Phe Lys His Ala Gly Glu Gly Asp Lys Asp Gly Lys Pro Gly Ile Gly
               275                      280                      285
Phe Arg Lys Glu Lys Arg Asn Leu Pro Pro Leu Pro Ser Leu Pro Pro
       290                      295                      300
Pro Pro Leu Pro Ser Ser Pro Pro Ser Ser Val Asn Arg Arg Leu
305                      310                      315                      320
Trp Thr Gly Arg Gln Lys Ser Ser Ala Asp His Arg Lys Ser Tyr Glu
               325                      330                      335
Phe Glu Asp Leu Leu Gln Ser Ser Ser Glu Ser Ser Arg Val Asp Trp
               340                      345                      350
Tyr Ala Gln Thr Lys Leu Gly Leu Thr Arg Thr Leu Ser Glu Glu Asn
       355                      360                      365
Val Tyr Glu Asp Ile Leu Asp Pro Pro Met Lys Glu Asn Pro Tyr Glu
   370                      375                      380
Asp Ile Glu Leu His Gly Arg Cys Leu Gly Lys Lys Xaa Val Ser
385                      390                      395
```

```
<210> 4895
<211> 1087
<212> DNA
<213> Homo sapiens

<400> 4895
gcggaatgtc aactattcaa catggaggcg gaggtcgata agctggaact gatgttccag
60
aaagctgagt ctgatctgga ttacattcaa tacaggctgg aatatgaaat caagactaat
120
catcctgatt cagcaagtga gaaaaatcca gttacactct taaggaatt gtcagtgata
180
aagtctcgat atcaaacttt gtatgcccgc tttaaaccag ttgctgttga gcagaaagag
240
agtaagagcc gcatttgtgc tactgtgaaa aagactatga atatgataca aaaactacag
300
aagcaaacag acctggaggt aatgctttca gttgacagct gtcaccactg actaaagaag
360
```

4072

```
agaaaactgc ggcagagcaa ttcaaatttc acatgccaga tttatgaaga aatggacttg
420
gaaaggaaat tctaacagag aagagcttaa ttccggagaa atttaggaag atgtcttgtt
480
aacccttgat gtctagagat tggggggctgg tgaagggggt ttggcttcaa tgactggata
540
atgatatctt tcatgagaga gattataaga agaagggcag ataatatatg aataaagttc
600
agccaaaagg atcaaatgag aataaaacga tttaaatata tgtacacacg catgcacaca
660
cacacttagt cttgtaattt caggccagaa attctcaaca ctattttgca tctgttttct
720
ttttctaagt catgataata tagatgttct ggtctatcat aaaagaatgt ttatgtacat
780
ttcagtcatt cggtatgtgg ctttgtaaat taaagtatag gcaaaacatt tgtgttatac
840
atgatatata atttcatttt gtaaatgttg attgcacatg tggtcacatt attgttgaga
900
ctgcttttat gtgacctgta gtctcccaca gaacctaaag taataagctg gctttctgt
960
gatagccacg tttgcgtatt tctttcccta tttcccttgc ctgctaatgt tgaacagcat
1020
gaacttgctt tctgatgctg ttttagactg tccctgttgt atctcaataa tatctttgtt
1080
ttccttc
1087


<210> 4896
<211> 109
<212> PRT
<213> Homo sapiens

<400> 4896
Met Glu Ala Glu Val Asp Lys Leu Glu Leu Met Phe Gln Lys Ala Glu
1               5                   10                  15
Ser Asp Leu Asp Tyr Ile Gln Tyr Arg Leu Glu Tyr Glu Ile Lys Thr
                20                  25                  30
Asn His Pro Asp Ser Ala Ser Glu Lys Asn Pro Val Thr Leu Leu Lys
            35                  40                  45
Glu Leu Ser Val Ile Lys Ser Arg Tyr Gln Thr Leu Tyr Ala Arg Phe
        50                  55                  60
Lys Pro Val Ala Val Glu Gln Lys Glu Ser Lys Ser Arg Ile Cys Ala
65                  70                  75                  80
Thr Val Lys Lys Thr Met Asn Met Ile Gln Lys Leu Gln Lys Gln Thr
                85                  90                  95
Asp Leu Glu Val Met Leu Ser Val Asp Ser Cys His His
                100                 105


<210> 4897
<211> 1733
<212> DNA
<213> Homo sapiens

<400> 4897
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nactttgttg cccgggctgg agtgcagtgg cgcgatctca gctcactgca gcctctgcct
60

ctcaggttca agcaattctc ctgcttcagc ctcccaagta gctgggatta caggcgccca
120

ccacgatgcc cagctaattt ttgtattttc agtaaagaca gggtttcacc atgttggcta
180

ggctggtctc aaactcctga tnccacccgc ctcggcctcc caaagtgctg ggattacagg
240

cgtgaaccac cgcgcccggg tgacctttgg aacttctgac cgactggctt caagttgagg
300

ttcccacaat tccctctgta ggttcaattt gctggagtgg ctcacaaaac taagggaaat
360

acatttactg gtttattata aaggatatta taaagatac agataaagag atgcataggg
420

tgaggtatga aggaagggca tggagcttcc tgtgccctcc ctgggcgcac cacccttcta
480

gaacctctgt atgttcagtt atctggaagc tctctgaatc cagtcccctt ggtttttatg
540

gaagcttcat gacagcagca ttccttctag caggatatgg ggtgggaccg tctctggaat
600

gagttttatg acccaccatc agaaaggtag ggaagattag agtcctgtct tgggcaggta
660

aaaggaaggg caggaggtta gagtgattgt ctcctgaggc ctgacacacc caatgttgta
720

acaaaagagt gtaacaaggg ctgtgggagt tatgagccag gaactgtgga cgaaaatgaa
780

tgcgtgtgtt tgtatatatg tgtgtctgtg tatttatata tatatgtgtg tatatacaaa
840

tacacacaca cacacgccac cacaaagcca aaaagaaga agtgatcatt tttctaagtg
900

ctacgatgga tgccctggga gagcgagcca gaggggggcat gtttatgggc tgagctgcac
960

ccccccaccc ccaatttatg tgttgaaccc ctaatccccg gtagctcgca atggcccgta
1020

tgtgaatgga tatggagata agagaggtga ttacattaag atgaggccgt caggggggccc
1080

ctcatccaat ctcaccagtg tccttataag agaaatctg gacacacaaa gagacaccag
1140

ggacacctgc actcagaaga ccaaccaggg ccatctccaa gccaaggaga gaggccttag
1200

aagaaaccaa ccctgcgaac accttggtct tggacttcca gcctccagga ctgtgagaaa
1260

ataaatgtct tttgtttaag ccactcagtc tctggtattt tcttatgaga gccagagcag
1320

accaacacag agggtcaggg gaagcgtcta tggggaggtg actcatgtac tgagtcttga
1380

gggagaggtt tccaggcaga tggagcagca tgctccaagg ccttgtgaag gaaaagagct
1440

cagtgtgctc cgggaaccag gagaagatga gggaggccag ggcctaagga gggcagggta
1500

ggagaggaag tgggaagaca tgcaggggac atgtgcacag ggctgggaag gagcctgagt
1560

tttcttctca gtgccatgtg aagccactga agagtttaa tgagaaaagg gacataagtc
1620

4074

agctcctatt ttaggaggtg gcctctggct gtgtctaatg gagttgacaa gaataaaagt
1680
agaaggagaa gaccaaggag gaggacgcca ggtgagagca ggtggtggtc agg
1733

<210> 4898
<211> 92
<212> PRT
<213> Homo sapiens

<400> 4898
Xaa Phe Val Ala Arg Ala Gly Val Gln Trp Arg Asp Leu Ser Ser Leu
 1   5   10   15
Gln Pro Leu Pro Leu Arg Phe Lys Gln Phe Ser Cys Phe Ser Leu Pro
            20   25   30
Ser Ser Trp Asp Tyr Arg Arg Pro Pro Arg Cys Pro Ala Asn Phe Cys
         35   40   45
Ile Phe Ser Lys Asp Arg Val Ser Pro Cys Trp Leu Gly Trp Ser Gln
     50   55   60
Thr Pro Asp Xaa Thr Arg Leu Gly Leu Pro Lys Cys Trp Asp Tyr Arg
65   70   75   80
Arg Glu Pro Pro Arg Pro Gly Asp Leu Trp Asn Phe
                85   90

<210> 4899
<211> 444
<212> DNA
<213> Homo sapiens

<400> 4899
ccggcccatc aaagactggc taaagcatca gccataaatg gggacaaacg tggggccagc
60
agcttctgtt cggggtctcg gcatcagcaa accgcagcag ctttggagaa gggtccgtga
120
gtggcggctc tggaggcagc aacggggtcc tttggggtgg gtgggagttc tgctggattc
180
aggtggaggt gaacatctgc cgttcccaca gccctgcgtg cacccccaaa tgctgctggc
240
ccacagaatc agccagtgcc acggccccac cacagccagg cttggccctg tcagcggcca
300
gcatcccgag ggccagggtc cgagtgtcct caccaaggag gctcttggcg tcgctgtgcc
360
ggctcccatg ggccttctgc tgggtcgagg gtaggtctcc tcctcccct ttgccctggc
420
attaaactga tggtcaggct ggga
444

<210> 4900
<211> 118
<212> PRT
<213> Homo sapiens

<400> 4900
Met Gly Thr Asn Val Gly Pro Ala Ala Ser Val Arg Gly Leu Gly Ile

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     1                  5                      10                     15
   Ser Lys Pro Gln Gln Leu Trp Arg Arg Val Arg Glu Trp Arg Leu Trp
               20                      25                     30
   Arg Gln Gln Arg Gly Pro Leu Gly Trp Val Gly Val Leu Leu Asp Ser
           35                      40                     45
   Gly Gly Gly Glu His Leu Pro Phe Pro Gln Pro Cys Val His Pro Gln
       50                      55                     60
   Met Leu Leu Ala His Arg Ile Ser Gln Cys His Gly Pro Thr Thr Ala
   65                      70                     75                     80
   Arg Leu Gly Pro Val Ser Gly Gln His Pro Glu Gly Gln Gly Pro Ser
                   85                      90                     95
   Val Leu Thr Lys Glu Ala Leu Gly Val Ala Val Pro Ala Pro Met Gly
               100                     105                    110
   Leu Leu Leu Gly Arg Gly
               115
```

<210> 4901
<211> 1520
<212> DNA
<213> Homo sapiens

<400> 4901

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ncgggagtcg cggcgctgcg ggtaggagcc gggttgcggg agaccccagg ttcggttggg
60
attcccagcc agaacggagc ttaagccggg caggcgatgc gaatgacgga gtagcgagct
120
gcacggcggc gtgctgcgct gttgaggacg ctgtcccgcg cgctcccagg ccgccccgag
180
gcttggggtc ttcgaaggat aatcggcgcc cggggccgaa cagcgggggc acacggggcg
240
ctgccgaagt gcaaggccac ggccagagct cgagcccgac gcgctgtctg gagtcgtagg
300
ttggcgccgt ttggggtcgg ggtctgaggc ttgggcgctg cctgggccga gcggagatcg
360
gggtttgcct cccgtccccg ctcaggaccc tgacgtggct gaagcggccc cgggagcatg
420
agcgggcagc gcgtggacgt caaggtggtg atgctgggca aggagtacgt gggcaagact
480
agcctggtgg agcgctacgt gcacgaccgc tttctggtgg ggccttatca gaacaccatc
540
ggggccgcct tcgtggccaa ggtgatgtcg gtcggagacc ggactgtgac attaggtatt
600
tgggacacag caggctctga gcgctatgag gccatgagta gaatctacta tcggggtgcc
660
aaggctgcca tcgtctgcta tgacctcaca gacagcagca gctttgagcg agcaaagttc
720
tgggtgaagg aactgcgcag cctagaggag ggctgccaaa tctacttatg tggcaccaag
780
agtgacctgc tggaagaaga ccggaggcgt cgacgtgtgg acttccacga cgtccaggac
840
tatgcagaca gtagctgctc ctcagccctt tggggggtgg gggtgtgtgg ctgtctgggt
900
ggatcaaaga aaatagggac tgccttggct gccagggcaa ggtgctctag gaggtcttcc
960
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4076

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tggcctcctt gaactgtggg gtccaggaga ctccctgaac tgctagccct cccttttgtc
1020
tgtttatcta attctcaggt atgaggcttt agtcacttct ctttacagat atcaaagctc
1080
agctctttga aacatccagc aagacaggcc agagtgtggg tgagtgctgt gctggagcct
1140
cacagcagga acatgcaggg gcaccagagg aagctgaata gggcacagag ggctgggtca
1200
ctgggagatc ccagggctac tggcattggg ccctcgctga tcatcatttt tcctgccaga
1260
cgagctcttc cagaaagtgg cagaggatta cgtcagtgtg gctgccttcc aggtgatgac
1320
agaggacaag ggcgtggatc tgggccagaa gccaaacccc tacttctaca gctgttgtca
1380
tcactgagtc agcactcacc tggcctgggg gaattaaagg aattccccgt aagcgtggac
1440
ccagctcctt tctgggcttg ggtagtcaaa tgtctgagct acgccaggtc ctcatgtcag
1500
cagagtggcg cctgcctgtc
1520


<210> 4902
<211> 184
<212> PRT
<213> Homo sapiens


<400> 4902
Met Ser Gly Gln Arg Val Asp Val Lys Val Val Met Leu Gly Lys Glu
1               5                   10                  15
Tyr Val Gly Lys Thr Ser Leu Val Glu Arg Tyr Val His Asp Arg Phe
                20                  25                  30
Leu Val Gly Pro Tyr Gln Asn Thr Ile Gly Ala Ala Phe Val Ala Lys
            35                  40                  45
Val Met Ser Val Gly Asp Arg Thr Val Thr Leu Gly Ile Trp Asp Thr
        50                  55                  60
Ala Gly Ser Glu Arg Tyr Glu Ala Met Ser Arg Ile Tyr Tyr Arg Gly
65                  70                  75                  80
Ala Lys Ala Ala Ile Val Cys Tyr Asp Leu Thr Asp Ser Ser Ser Phe
                85                  90                  95
Glu Arg Ala Lys Phe Trp Val Lys Glu Leu Arg Ser Leu Glu Glu Gly
            100                 105                 110
Cys Gln Ile Tyr Leu Cys Gly Thr Lys Ser Asp Leu Leu Glu Glu Asp
            115                 120                 125
Arg Arg Arg Arg Val Asp Phe His Asp Val Gln Asp Tyr Ala Asp
    130                 135                 140
Ser Ser Cys Ser Ser Ala Leu Trp Gly Val Gly Val Cys Gly Cys Leu
145                 150                 155                 160
Gly Gly Ser Lys Lys Ile Gly Thr Ala Leu Ala Ala Arg Ala Arg Cys
                165                 170                 175
Ser Arg Arg Ser Ser Trp Pro Pro
                180


<210> 4903
<211> 1064
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<212> DNA
<213> Homo sapiens

<400> 4903
agccagtgtc ccaggcgttc tcacgccgca acaattcctg agtagggcct tgcttgagtt
60
cttcggaaag tctcatccac ccccacatcg cctctttagg aagtcactta atgttgggct
120
tcattattcc cacatccctt tccttactac ttgcctgcac ttcttgagaa aaagactgca
180
gaaaggagag gtggggcttt cagtagaaac aagcaaaccg cagtccctgt gggggggactc
240
tccaggaaga aggttccgca agaaccgtgg gcgacagtta tggagaagcg tctgcaggag
300
gctcagctgt acaaggagga agggaaccag cgctaccggg aagggaagta ccgagatgct
360
gtgagtaggt accatcgagc tctgcttcag ctgcggggtc tggatccgna gtctgccctc
420
tccgttacct aatctcggac ctcagggccc nggccctcac gcctgnaaca agaaaacata
480
ttgcatacca cccagacaga ctgctataac aatctagctg cttgtctcct tcagatggag
540
cccgtgaact acgaacgagt gagagaatat agtcagaaag tcctggaacg acagcctgat
600
aatgccaagg ccttgtatcg ggccggagtg gccttttttcc atctgcagga ctatgaccag
660
gcccgccact acctcctggc tgccgtgaat aggcagccta aagatgccaa cgtccggcgg
720
tacctccagc tgacacagtc agaactcagc agctaccata gaaaagagaa gcagctctac
780
ctgggcatgt ttggttaaca aagaagaaag atgctcctcc agttgaactt aggtggacca
840
ttaaacatgc atgaaggaga aatctgagcc tcagcaagag aaattaaccc tatacctctg
900
acccaggtgg atttttgttt ctagttctgc acaaacttca ctacttagac agtctgagtc
960
ttttctgtc tatccatctg tttatttcta tacctttcaa tacatgttat tgttgcagat
1020
atttggcttg agaaatataa tcagaaaaca taaaaaaaaa aaaa
1064

<210> 4904
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4904
Cys Trp Ala Ser Leu Phe Pro His Pro Phe Pro Tyr Tyr Leu Pro Ala
1   5   10   15
Leu Leu Glu Lys Lys Thr Ala Glu Arg Arg Gly Gly Ala Phe Ser Arg
            20   25   30
Asn Lys Gln Thr Ala Val Pro Val Gly Gly Leu Ser Arg Lys Lys Val
        35   40   45
Pro Gln Glu Pro Trp Ala Thr Val Met Glu Lys Arg Leu Gln Glu Ala

```
        50                    55                    60
Gln Leu Tyr Lys Glu Glu Gly Asn Gln Arg Tyr Arg Glu Gly Lys Tyr
65                    70                    75                    80
Arg Asp Ala Val Ser Arg Tyr His Arg Ala Leu Leu Gln Leu Arg Gly
                    85                    90                    95
Leu Asp Pro Xaa Ser Ala Leu Ser Val Thr
                    100                   105


<210> 4905
<211> 615
<212> DNA
<213> Homo sapiens

<400> 4905
cccggcagcc acgtggcgga tggtgttccg cgacaggctc agatgcagca ggcctgtcat
60
gttggccagg tcgcggcggc gcacggaggc gatgaagttg tctgccagcc gcagctcggc
120
tgcccggcgg tccagcgagg gtggcacgaa caggaggcct gcccctgggc acagcacgct
180
taggggcagc gactgtgtct ggcagcggca gcggcgggga catgggctgg gtgtgccgag
240
acactggagg acctcgacct ctcctacaac aacctcgagc agctgccctg ggaggccctg
300
ggccgcctgg gcaacgtcaa cacgttgggc ctcgaccaca acctgctggc ttctgtgccc
360
gccggcgctt tttcccgcct gcacaagctg gcccggctgg acatgacctc caaccgcctg
420
accacaatcc cacccgaccc actcttctcc cgcctgcccc tgctcgccag gccccggggc
480
tcgcccgcct ctgccctggt gctggccttt ggcgggaacc ccctgcactg caactgcgag
540
ctggtgtggc tgcgtcgcct ggcgcgggag gacgacctcg aggcctgcgc gtccccacct
600
gctctgggcg gccgc
615


<210> 4906
<211> 144
<212> PRT
<213> Homo sapiens

<400> 4906
Gly Gln Arg Leu Cys Leu Ala Ala Ala Ala Ala Gly Thr Trp Ala Gly
1                   5                    10                   15
Cys Ala Glu Thr Leu Glu Asp Leu Asp Leu Ser Tyr Asn Asn Leu Glu
                    20                   25                   30
Gln Leu Pro Trp Glu Ala Leu Gly Arg Leu Gly Asn Val Asn Thr Leu
            35                   40                   45
Gly Leu Asp His Asn Leu Leu Ala Ser Val Pro Ala Gly Ala Phe Ser
            50                   55                   60
Arg Leu His Lys Leu Ala Arg Leu Asp Met Thr Ser Asn Arg Leu Thr
65                   70                   75                   80
Thr Ile Pro Pro Asp Pro Leu Phe Ser Arg Leu Pro Leu Leu Ala Arg
```

```
                    85                    90                    95
 Pro Arg Gly Ser Pro Ala Ser Ala Leu Val Leu Ala Phe Gly Gly Asn
               100                   105                   110
 Pro Leu His Cys Asn Cys Glu Leu Val Trp Leu Arg Arg Leu Ala Arg
           115                   120                   125
 Glu Asp Asp Leu Glu Ala Cys Ala Ser Pro Pro Ala Leu Gly Gly Arg
        130                   135                   140
```

<210> 4907
<211> 1748
<212> DNA
<213> Homo sapiens

<400> 4907

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nnttttgct ggaaaatact ttttaattat gaacatgtta aaaataaaaa acagcagaag
60
ccctgatatt acctcttttt cctcattttt tatactacct tttaaaataa agcaggaaat
120
gtggccagca gctggtcccg tctcttctgc cccaacagct gtatccacag gttgtgaggc
180
gggaacgact gttctgtaac ccctacaacg gagcctggca ggaaggaaat cacctaaaaa
240
agaaactgtc agagagattt aatagtcaca tgttatcatt aggagttggt tactgtgtca
300
cattcatgct tttagctaaa cactttaaga ttcaatatta cttttttct ctcctctgaa
3c0
atgtgtccgg tgaagatgtc ccactaaggt aagtttgaca tggtgtaagg gagttgaaag
420
gggtaaacgc ggataaagag cagattactt gaccctacat tttaagagaa gacgacgcct
480
tccgggcgca cgccgagcag aactccaccg acaccttatc cttgtccaca tggagacaga
540
ctcctcccgc cgagtcgtcc tcttccagca ggtcctgctt ctgctttccc accggcagag
600
cgtagtcgtg gtcaccggcg ggcgagtctc tgaagagcga ggtggtcagc cgcagtccca
660
cgccgctcag ccggctcagc aagcgagcca gtccagtctc gttggctaag actgcccgta
720
ggtagcgact ctcctcctgc agtgcctgta cgcgtttgcc cagctcccga ttctcggccc
780
gcagctcctg gttctcggct gccagacccc ggactcgact ctccagcccc atcacgtact
840
ccttcttctt cagtcgatta aggcgggcag cggccgccgc cgccttccgg ggactctttg
900
tcgccgcctn ggttgttgtc gttaccgctg ccgccaccgc cgcctcctcc tggggacttt
960
ctccgcctct tttcggcgct gccactgtca ctgctgctgc ctgctgctgc agcctccgat
1020
accgtttaac agcctttgca gnncaggtca gagaagcgct gcatttcagc agccgcggcc
1080
tcatcgtcat cgtcccctct ccacaggccg ccgctatccg agcctccgcc agacgaggag
1140
agaggcccn nggcgagcta agcccggggt ccaggtgcca gtccggttgc ctggggtcca
1200
```

```
ggagatccgc cagttccagc ccagacagaa agtccatatc ctccgtctct tcccccggga
1260
ggctggcgat cgcctcctcc tccatctcct cgggggaggg cgcgcgcacg gccacgccgc
1320
cgcggctccc cctccncggc ttccaactct ccttcgtcgc caaactgctg cttgcggccg
1380
ggagatccgg ccgccgccgt ctcctcctcc cccgctgcag cccgggtcag gtcagagggc
1440
agcgaacaag ttgcagccgg ctccgggctc tcactgcggg ttggggagtt gctgcccgag
1500
gctgccagca gcttggtcag gctatgcctc atgagggcca cgggcggccg cggtagcccc
1560
ggccgctaag agtggctcac gggccccaag gatcccaggc cccagggcgg gtagcccccg
1620
gcactggccg aaacgaaatg cagggaaagg tccgagtcgc ctcccgcctc acttggctag
1680
tcgcacccaa ggcgcgggga gggacgggag aacgaagcgg tgaggccctg cgatgactcg
1740
accgcgcc
1748
```

```
<210> 4908
<211> 55
<212> PRT
<213> Homo sapiens
```

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<400> 4908
Glu Lys Thr Thr Pro Ser Gly Arg Thr Pro Ser Arg Thr Pro Pro Thr
1               5                   10                  15
Pro Tyr Pro Cys Pro His Gly Asp Arg Leu Leu Pro Pro Ser Arg Pro
            20                  25                  30
Leu Pro Ala Gly Pro Ala Ser Ala Phe Pro Pro Ala Glu Arg Ser Arg
        35                  40                  45
Gly His Arg Arg Ala Ser Leu
    50                  55
```

```
<210> 4909
<211> 1960
<212> DNA
<213> Homo sapiens
```

```
<400> 4909
nacgcgtcct gcggtcagga cagtgttcta agtgtgaagg gtccctgggc agaggctggg
60
agggtggcca gagaccaggg agggcccctc catctggtgg gtttggcagg tgtgtccccg
120
cgcggctccc cgaaccggaa gtggaggtga gctgtcgcgg cggcgcccg gccttgctca
180
acgcccagca gtccccaccg tcgctgccgc cgccaccgcc ctcggccgct gccgaggcct
240
cctgcagcca tcatgtccgc cagcgccgtc tacgtgctgg acctgaaggg caaggtgctc
300
atctgccgga actaccgtgg cgacgtggac atgtcagagg tggagcactt catgcccatc
360
```

```
ctgatggaga aggaggagga ggggatgctg tcgcccatcc tggcccacgg gggggtccgt
420
ttcatgtgga tcaaacacaa caacctgtat ctggttgcca catccaagaa gaacgcgtgc
480
gtgtcgctgg tcttttcttt cctctataag gtggtgcagg tgttttccga gtacttcaag
540
gagctggagg aggagagcat ccgggacaac tttgttatca tctacgagct gctggacgag
600
ctcatggact tcggcttccc ccagaccacc gacagcaaga tcctgcagga gtacatcact
660
cagcagagca acaagctgga gacgggcaag tcacgggtgc cacccactgt caccaacgct
720
gtgtcctggc gctccgaggg tatcaagtat aagaagaacg aggtcttcat tgatgtcata
780
gagtctgtca acctgctggt caatgccaac ggcagcgtcc ttctgagcga aatcgtcggt
840
accatcaaga tgcgagtctt cctctcgggc atgcccgagc tgcgcctggg cctcaacgac
900
aaggtcctct ttgacaacac gggccgcggc aaaagcaaat ccgtggagct ggaggatgtg
960
aagttccacc agtgtgtgcg gctatcacgc ttcgagaatg accgcaccat ctccttcatc
1020
ccacccgacg gcgagttcga gctcatgtcc taccgtctca acacccacgt caagcctttg
1080
atatggatcg agtctgtcat tgagaagttc tcccacagcc gcatcgagta catggtcaag
1140
gccaaggggc agtttaagaa acagtcagtg gccaacggtg tggagatatc tgtgcctgta
1200
cccagcgatg ccgactcccc cagattcaag accagtgtgg gcagcgccaa gtatgtgccg
1260
gagagaaacg tcgtgatttg gagtattaag tctttcccgg ggggcaagga gtacttgatg
1320
cgagcccact ttggcctccc cagtgtggaa aaggaagagg tggagggccg gccccccatc
1380
ggggtcaagt ttgagatccc ctacttcacc gtctctggga tccaggtccg atacatgaag
1440
atcattgaga aaagtggtta ccaggccctg ccctgggttc gctacatcac ccagagtggc
1500
gattaccaac ttcgtaccag ctagaaggga aagagatgg gggcttgaac acggggcttc
1560
cttacagccc cggatgcaga ttttagaggg agggcaggtg cgggctgtgt gtgtctgtgt
1620
gagggcaggt cctggacttg gcagtttctt gctcccagca cccgcccctt cctcacctct
1680
tccttattcc ataggctggg agagaaactc tctctgcttc cctcgccctt ggagctttcc
1740
ccatccccct gattttatat gaagaaatag aagaggggct tgaagtcccc ctcgcgagtg
1800
ccttcttgca attacctgcc ttagcgggtg ttgcgggtcc ctccttcaca gccgctgagc
1860
ccagaggtcc cgctggcccc tcctctgaat tttaggatgt cattaaaaag atgaatctaa
1920
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
1960
```

4082

<210> 4910
<211> 423
<212> PRT
<213> Homo sapiens

<400> 4910
Met Ser Ala Ser Ala Val Tyr Val Leu Asp Leu Lys Gly Lys Val Leu
1   5   10   15
Ile Cys Arg Asn Tyr Arg Gly Asp Val Asp Met Ser Glu Val Glu His
            20   25   30
Phe Met Pro Ile Leu Met Glu Lys Glu Glu Glu Gly Met Leu Ser Pro
        35   40   45
Ile Leu Ala His Gly Gly Val Arg Phe Met Trp Ile Lys His Asn Asn
    50   55   60
Leu Tyr Leu Val Ala Thr Ser Lys Lys Asn Ala Cys Val Ser Leu Val
65   70   75   80
Phe Ser Phe Leu Tyr Lys Val Val Gln Val Phe Ser Glu Tyr Phe Lys
                85   90   95
Glu Leu Glu Glu Glu Ser Ile Arg Asp Asn Phe Val Ile Ile Tyr Glu
            100   105   110
Leu Leu Asp Glu Leu Met Asp Phe Gly Phe Pro Gln Thr Thr Asp Ser
        115   120   125
Lys Ile Leu Gln Glu Tyr Ile Thr Gln Gln Ser Asn Lys Leu Glu Thr
    130   135   140
Gly Lys Ser Arg Val Pro Pro Thr Val Thr Asn Ala Val Ser Trp Arg
145   150   155   160
Ser Glu Gly Ile Lys Tyr Lys Lys Asn Glu Val Phe Ile Asp Val Ile
                165   170   175
Glu Ser Val Asn Leu Leu Val Asn Ala Asn Gly Ser Val Leu Leu Ser
            180   185   190
Glu Ile Val Gly Thr Ile Lys Met Arg Val Phe Leu Ser Gly Met Pro
        195   200   205
Glu Leu Arg Leu Gly Leu Asn Asp Lys Val Leu Phe Asp Asn Thr Gly
    210   215   220
Arg Gly Lys Ser Lys Ser Val Glu Leu Glu Asp Val Lys Phe His Gln
225   230   235   240
Cys Val Arg Leu Ser Arg Phe Glu Asn Asp Arg Thr Ile Ser Phe Ile
                245   250   255
Pro Pro Asp Gly Glu Phe Glu Leu Met Ser Tyr Arg Leu Asn Thr His
            260   265   270
Val Lys Pro Leu Ile Trp Ile Glu Ser Val Ile Glu Lys Phe Ser His
        275   280   285
Ser Arg Ile Glu Tyr Met Val Lys Ala Lys Gly Gln Phe Lys Lys Gln
    290   295   300
Ser Val Ala Asn Gly Val Glu Ile Ser Val Pro Val Pro Ser Asp Ala
305   310   315   320
Asp Ser Pro Arg Phe Lys Thr Ser Val Gly Ser Ala Lys Tyr Val Pro
                325   330   335
Glu Arg Asn Val Val Ile Trp Ser Ile Lys Ser Phe Pro Gly Gly Lys
            340   345   350
Glu Tyr Leu Met Arg Ala His Phe Gly Leu Pro Ser Val Glu Lys Glu
        355   360   365
Glu Val Glu Gly Arg Pro Pro Ile Gly Val Lys Phe Glu Ile Pro Tyr

```
        370                    375                    380
    Phe Thr Val Ser Gly Ile Gln Val Arg Tyr Met Lys Ile Ile Glu Lys
    385                    390                    395                    400
    Ser Gly Tyr Gln Ala Leu Pro Trp Val Arg Tyr Ile Thr Gln Ser Gly
                        405                    410                    415
    Asp Tyr Gln Leu Arg Thr Ser
                420


<210> 4911
<211> 1862
<212> DNA
<213> Homo sapiens


<400> 4911
tataagaaat aattgtgaca tttcatgcct ggaaatgtat cacgggggct ttcgttcata
60
ttgacactat atattactga atggatcagt taatatataa ccagtttaaa ggacctgaaa
120
atgtagtgac agccaagaag gatattttga agtttgaaat gatccctata taaatagaac
180
ggatcagcat aactttggga taaaattagc cgacagtttg tggactctcc agcatgcgcc
240
tgtttgctcg gtgctgttct ctcgataaat cacaacaaag cttccagagg gagaggaagg
300
atggacggca ccactgcccc tgtcactaaa tctggagctg ccaagttagt taagagaaat
360
ttccttgagg cgctaaagtc caatgacttc ggaaaattga aggctatttt gatccaaagg
420
caaatagatg tggacactgt ttttgaagtc aagatgaga atatggtttt ggcatcttat
480
aaacaaggtt actggttgcc tagctataaa ttgaagtctt cctgggccac aggcctccat
540
ctctctgtct tgtttggcca tgtggaatgt cttctggtgc tactggacca caatgctaca
600
atcaactgta gacccaatgg gaaaacccct cttcacgtgg cttgtgaaat ggccaatgtg
660
gattgtgtta agatcctctg tgatcgtggg gcaaagctca attgctactc cttaagtgga
720
cacacagctt gcactttttg tacaactcca gttccattc tctgtgccaa gcaattggtt
780
tggagagtga cacaagtcaa ccacatgtta ggaaattccc tggtcaatga gtggaacat
840
gtgacacaag tcaaccacat gttaggaaat tccctggtca atgaagtgga acatggggcg
900
aatgtgaaca tgaagaccaa caaccaagat gaggagacgc ccttgcacac ggctgcccac
960
ttcggccttt cggagctggt ggccttctac gtggaacacg gggccatagt ggacagcgtg
1020
aatgcccaca tggagacccc cctggccatc gccgcctact gggccctccg ctttaaggag
1080
caggagtaca gcacggagca ccacctggtc tgccgcatgc tgcttgacta caaagccgaa
1140
gtcaatgccc gagatgacga ctttaaatct cccctccaca aggcagcctg gaactgtgac
1200
```

```
cacgtgctca tgcacatgat gctggaagct ggcgccgaag ccaatctcat ggatatcaac
1260
ggctgtgctg ccatccagta cgtgctgaag gtcacctccg tgcgccctgc tgcccagcct
1320
gagatctgct accagctcct gttgaaccat ggggctgccc gaatataccc tccacagttc
1380
cataaggtga tacaggcctg ccattcttgt cctaaagcaa ttgaagttgt agtcaatgcc
1440
tatgaacaca tcagatggaa cacaaagtgg agaagagcta tccccgatga tgacttggag
1500
gtaaataatc gattcccttc taatagtttt cactatcaag tacttccaga ctgctctaga
1560
agtacagaaa attgtaacaa aaaagttggt tttgagaatg cctttaaagc gtactcaaat
1620
gcaatgagac aaagggttat aaaatgcagg tttgagagtt aatatttcca tcaaatatgt
1680
ggcattaagg agtgtcttgg ggaattcctc catttaaggg caagttgaat taagtatata
1740
aaggtggcag ttttcctttc ttctcattaa tttagatgag ttaaatgata acatttggaa
1800
ttgcttatat agcattttta ccagaatatt aaagcgtttt gtgtagatta tttcatttac
1860
tt
1862


<210> 4912
<211> 453
<212> PRT
<213> Homo sapiens

<400> 4912
Met Asp Gly Thr Thr Ala Pro Val Thr Lys Ser Gly Ala Ala Lys Leu
1               5                  10                  15
Val Lys Arg Asn Phe Leu Glu Ala Leu Lys Ser Asn Asp Phe Gly Lys
            20                  25                  30
Leu Lys Ala Ile Leu Ile Gln Arg Gln Ile Asp Val Asp Thr Val Phe
        35                  40                  45
Glu Val Glu Asp Glu Asn Met Val Leu Ala Ser Tyr Lys Gln Gly Tyr
    50                  55                  60
Trp Leu Pro Ser Tyr Lys Leu Lys Ser Ser Trp Ala Thr Gly Leu His
65                  70                  75                  80
Leu Ser Val Leu Phe Gly His Val Glu Cys Leu Leu Val Leu Leu Asp
                85                  90                  95
His Asn Ala Thr Ile Asn Cys Arg Pro Asn Gly Lys Thr Pro Leu His
            100                 105                 110
Val Ala Cys Glu Met Ala Asn Val Asp Cys Val Lys Ile Leu Cys Asp
            115                 120                 125
Arg Gly Ala Lys Leu Asn Cys Tyr Ser Leu Ser Gly His Thr Ala Leu
        130                 135                 140
His Phe Cys Thr Thr Pro Ser Ser Ile Leu Cys Ala Lys Gln Leu Val
145                 150                 155                 160
Trp Arg Val Thr Gln Val Asn His Met Leu Gly Asn Ser Leu Val Asn
                165                 170                 175
Glu Val Glu His Val Thr Gln Val Asn His Met Leu Gly Asn Ser Leu
```

4085

```
                    180                      185                     190
    Val Asn Glu Val Glu His Gly Ala Asn Val Asn Met Lys Thr Asn Asn
                195                     200                 205
    Gln Asp Glu Glu Thr Pro Leu His Thr Ala Ala His Phe Gly Leu Ser
            210                     215                 220
    Glu Leu Val Ala Phe Tyr Val Glu His Gly Ala Ile Val Asp Ser Val
    225                     230                 235                 240
    Asn Ala His Met Glu Thr Pro Leu Ala Ile Ala Ala Tyr Trp Ala Leu
                        245                 250                 255
    Arg Phe Lys Glu Gln Glu Tyr Ser Thr Glu His His Leu Val Cys Arg
            260                     265                 270
    Met Leu Leu Asp Tyr Lys Ala Glu Val Asn Ala Arg Asp Asp Asp Phe
            275                     280                 285
    Lys Ser Pro Leu His Lys Ala Ala Trp Asn Cys Asp His Val Leu Met
            290                     295                 300
    His Met Met Leu Glu Ala Gly Ala Glu Ala Asn Leu Met Asp Ile Asn
    305                     310                 315                 320
    Gly Cys Ala Ala Ile Gln Tyr Val Leu Lys Val Thr Ser Val Arg Pro
                        325                 330                 335
    Ala Ala Gln Pro Glu Ile Cys Tyr Gln Leu Leu Leu Asn His Gly Ala
                340                     345                 350
    Ala Arg Ile Tyr Pro Pro Gln Phe His Lys Val Ile Gln Ala Cys His
            355                     360                 365
    Ser Cys Pro Lys Ala Ile Glu Val Val Val Asn Ala Tyr Glu His Ile
        370                     375                 380
    Arg Trp Asn Thr Lys Trp Arg Arg Ala Ile Pro Asp Asp Asp Leu Glu
    385                     390                 395                 400
    Val Asn Asn Arg Phe Pro Ser Asn Ser Phe His Tyr Gln Val Leu Pro
                        405                 410                 415
    Asp Cys Ser Arg Ser Thr Glu Asn Cys Asn Lys Lys Val Gly Phe Glu
                420                     425                 430
    Asn Ala Phe Lys Ala Tyr Ser Asn Ala Met Arg Gln Arg Val Ile Lys
            435                     440                 445
    Cys Arg Phe Glu Ser
        450


<210> 4913
<211> 2090
<212> DNA
<213> Homo sapiens

<400> 4913
gtgccaatat gcaaaagagg tggcccagat gcaggcccgc ccctggagc ggccgaggta
60
gggggtgagg cctccgcggg cgccgctggc atcccagcgt tctctgcggg cgcaggggg
120
ccgctcttgc ccggcgtggc gactcgctag cgtcagcagc gccgcagccg acgagaaag
180
cggaagatgg cggcggcggc cgggaggccg tgaggagagc ggcggctgcg agggcggccg
240
atggcggccg ggaggcgccc tcggacactt gcgggtcgtt agggcgcgac gctgggaggc
300
atgtcggagc acgtggagcc cgcagctccg gggcccgggc ccaacggcgg cggcggcggc
360
```

4086

ccggcccccg cgcgcgggcc tcgcaccccc aatctcaacc ccaaccccct catcaacgtg
420

cgcgaccggc tcttccacgc gctgttcttc aagatggctg tcacctattc gcggctcttc
480

ccgcccgcct tccgccgtct cttcgagttc ttcgtgctgc tcaaggccct gtttgtgctc
540

ttcgtcctgg cctacatcca catcgtcttc tcccgctcgc ccatcaactg cctggagcat
600

gtgcgtgaca agtggccgcg tgagggcatc ctgcgtgtgg aagtgcggca caactcgagc
660

cgcgcgcccg tcttcctaca gttctgtgac agcggcggcc gcgggagctt cccgggcctg
720

gccgtggaac caggcagcaa cctggacatg gaagatgagg aggaggaaga gctgaccatg
780

gagatgtttg ggaacagctc catcaagttt gagctggaca tcgagcccaa ggtgttcaag
840

ccgccgagta gcacagaggc cctgaatgac agccaggagt tccccttccc cgagacgccc
900

accaaagtgt ggccgcagga cgagtacatc gtggagtact cactagagta tggcttcctt
960

cgcctgtcgc aggccacccg ccagcgcctg agcatccccg tcatggtggt caccctggac
1020

cccacgcggg accagtgctt cggggaccgc ttcagccgcc tgctgctgga tgagttcctg
1080

ggctacgatg acatcctcat gtccagcgtg aagggcctgg ccgagaacga ggagaacaag
1140

ggcttcctgc ggaatgtggt gtcgggcgag cactaccgct ttgtgagcat gtggatggcg
1200

cggacgtcct acctggccgc cttcgccatc atggtcatct tcacgctgag cgtgtccatg
1260

ctgctgcggt actcacacca ccagatcttc gtcttcatcg tggacctgct gcagatgctg
1320

gagatgaaca tggccatcgc cttccccgca gcgcccctgc tgaccgtcat cctggccctc
1380

gtcgggatgg aggccatcat gtcggagttc ttcaacgaca ccaccaccgc cttctacatc
1440

atcctcatcg tgtggctcgc ggaccagtat gacgccatct gctgccacac cagcaccagc
1500

aagcggcatt ggctgcggtt cttctatctc taccacttcg ccttctatgc ctatcactac
1560

cgcttcaatg gcagtatag cagcctggcc ctggtcacct cctggctctt catccagcat
1620

tccatgatct acttcttcca ccactatgag ctgcctgcca tcctgcagca ggtccgcatc
1680

caggagatgc tgcttcaggc gccgccactg ggccccggga cccccacggc gctgcccgat
1740

gacatgaaca caactcgggg cgccccggct acagcccctg actctgccgg ccagccccc
1800

gccctgggcc ccgtgtttga gctggtcagc aaggagaggg ggtggggttc cgcggaaggt
1860

tctggagggg tcttggtagg tctgcagtga accgtcctga ggatggagtg gggtcccatg
1920

gtgcaggtct ctgagcaagg cggaggtgtg gaggagaggc cggcttgggg tggggcctcg
1980

cgccctagtg ccggccggcc tcagcccggc tctgcctggt gctccctgca gtgccttctc
2040

catggccccg ccctccccgc gtgtgcgcca ggcttggggt ccccgggaga
2090

<210> 4914
<211> 529
<212> PRT
<213> Homo sapiens

<400> 4914
Met Ser Glu His Val Glu Pro Ala Ala Pro Gly Pro Gly Pro Asn Gly
1   5   10   15
Gly Gly Gly Gly Pro Ala Pro Ala Arg Gly Pro Arg Thr Pro Asn Leu
            20   25   30
Asn Pro Asn Pro Leu Ile Asn Val Arg Asp Arg Leu Phe His Ala Leu
        35   40   45
Phe Phe Lys Met Ala Val Thr Tyr Ser Arg Leu Phe Pro Pro Ala Phe
        50   55   60
Arg Arg Leu Phe Glu Phe Phe Val Leu Leu Lys Ala Leu Phe Val Leu
65   70   75   80
Phe Val Leu Ala Tyr Ile His Ile Val Phe Ser Arg Ser Pro Ile Asn
                85   90   95
Cys Leu Glu His Val Arg Asp Lys Trp Pro Arg Glu Gly Ile Leu Arg
            100   105   110
Val Glu Val Arg His Asn Ser Ser Arg Ala Pro Val Phe Leu Gln Phe
        115   120   125
Cys Asp Ser Gly Gly Arg Gly Ser Phe Pro Gly Leu Ala Val Glu Pro
        130   135   140
Gly Ser Asn Leu Asp Met Glu Asp Glu Glu Glu Glu Leu Thr Met
145   150   155   160
Glu Met Phe Gly Asn Ser Ser Ile Lys Phe Glu Leu Asp Ile Glu Pro
                165   170   175
Lys Val Phe Lys Pro Pro Ser Ser Thr Glu Ala Leu Asn Asp Ser Gln
            180   185   190
Glu Phe Pro Phe Pro Glu Thr Pro Thr Lys Val Trp Pro Gln Asp Glu
        195   200   205
Tyr Ile Val Glu Tyr Ser Leu Glu Tyr Gly Phe Leu Arg Leu Ser Gln
210   215   220
Ala Thr Arg Gln Arg Leu Ser Ile Pro Val Met Val Val Thr Leu Asp
225   230   235   240
Pro Thr Arg Asp Gln Cys Phe Gly Asp Arg Phe Ser Arg Leu Leu Leu
            245   250   255
Asp Glu Phe Leu Gly Tyr Asp Asp Ile Leu Met Ser Ser Val Lys Gly
            260   265   270
Leu Ala Glu Asn Glu Glu Asn Lys Gly Phe Leu Arg Asn Val Val Ser
        275   280   285
Gly Glu His Tyr Arg Phe Val Ser Met Trp Met Ala Arg Thr Ser Tyr
        290   295   300
Leu Ala Ala Phe Ala Ile Met Val Ile Phe Thr Leu Ser Val Ser Met
305   310   315   320
Leu Leu Arg Tyr Ser His His Gln Ile Phe Val Phe Ile Val Asp Leu
            325   330   335
Leu Gln Met Leu Glu Met Asn Met Ala Ile Ala Phe Pro Ala Ala Pro

4088

```
                 340                  345                  350
Leu Leu Thr Val Ile Leu Ala Leu Val Gly Met Glu Ala Ile Met Ser
            355                  360                  365
Glu Phe Phe Asn Asp Thr Thr Thr Ala Phe Tyr Ile Ile Leu Ile Val
        370                  375                  380
Trp Leu Ala Asp Gln Tyr Asp Ala Ile Cys Cys His Thr Ser Thr Ser
385                  390                  395                  400
Lys Arg His Trp Leu Arg Phe Phe Tyr Leu Tyr His Phe Ala Phe Tyr
                405                  410                  415
Ala Tyr His Tyr Arg Phe Asn Gly Gln Tyr Ser Ser Leu Ala Leu Val
            420                  425                  430
Thr Ser Trp Leu Phe Ile Gln His Ser Met Ile Tyr Phe Phe His His
            435                  440                  445
Tyr Glu Leu Pro Ala Ile Leu Gln Gln Val Arg Ile Gln Glu Met Leu
        450                  455                  460
Leu Gln Ala Pro Pro Leu Gly Pro Gly Thr Pro Thr Ala Leu Pro Asp
465                  470                  475                  480
Asp Met Asn Asn Asn Ser Gly Ala Pro Ala Thr Ala Pro Asp Ser Ala
                485                  490                  495
Gly Gln Pro Pro Ala Leu Gly Pro Val Phe Glu Leu Val Ser Lys Glu
            500                  505                  510
Arg Gly Trp Gly Ser Ala Glu Gly Ser Gly Gly Val Leu Val Gly Leu
        515                  520                  525
Gln
```

```
<210> 4915
<211> 1157
<212> DNA
<213> Homo sapiens
```

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<400> 4915
gcacaggaag ctgctttatt cttgctgaga gacaggggct gctgcccaca cacagaccct
60
gtgtccaccc tgcagaaaag gccaggaggg cctgcagagc tgggaagcgc cacccaaggg
120
tctcagtcac caagactgca ggagaggcaa ggccatgtca ggcctggcag ctgtggctgg
180
ggccaggagg gagggaccag gcccatgtgg aacaggaca aatgcccaag gccacatcct
240
tcgtccacag tcctgaggct cctgccaggc tgacaggaaa cagcccagag ctgaggtctt
300
tgagccggtc attccaacat tgcaagcacc acccagtcct cctggctgaa gttgagtgag
360
gtaagaaggg cccgtggcca gggacaggga gggccctcag gaggctccca gggctgctgc
420
tgaggccggg cagcgtccta ggcctcaagg acactccttt ctccccgctg ccccaagcca
480
ccatggcagc agcatcaggg ctgtgccgcc tcatccccat ccctgtctgg gcagatgtga
540
agggtgaccg tctcccccac tgtcccgaag ttgacggtct gggtggaaag ctctgtggtg
600
aagctgctct ggccactgtc cgcagaacgc cggatgcggg tgcagaaaga ctgcgtccag
660
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```
ggagcactgc ccacaggccg agccggggcc tcccgcaaga ggaaggaggt gccctcaagg
720
ctacggacct ggggtcccgg tggtgacgcc ccacggggct caggcctaaa gaggccgaga
780
gggcctcggg gacccagtgc agccccacgc tgagcagcac aggctgcccc accgtgggct
840
ccccgatctc tctctggatc accgagacct cgcagggagg gtcatcaggg gcgccaggcc
900
cagggccacc acagtggaag gtctcccctt ccccaggcac gtaatcttcc aggtcagcca
960
gtgtcagcat gcggccgttg tgcgtgagga tcttggggtc acgatcccca aggctgtgtg
1020
tgtcctggga ctcctccgtc acaaagagag tctccgtctt cccctcttc ctagtcccgc
1080
ctcctccatc gtgccctcct cctccaggct gcccatgcca gaacggagag agaactagtt
1140
ctctctctct ctctctc
1157
```

```
<210> 4916
<211> 59
<212> PRT
<213> Homo sapiens
```

```
<400> 4916
Met Arg Val Gln Lys Asp Cys Val Gln Gly Ala Leu Pro Thr Gly Arg
1               5                   10                  15
Ala Gly Ala Ser Arg Lys Arg Lys Glu Val Pro Ser Arg Leu Arg Thr
            20                  25                  30
Trp Gly Pro Gly Gly Asp Ala Pro Arg Gly Ser Gly Leu Lys Arg Pro
        35                  40                  45
Arg Gly Pro Arg Gly Pro Ser Ala Ala Pro Arg
    50                  55
```

```
<210> 4917
<211> 1544
<212> DNA
<213> Homo sapiens
```

```
<400> 4917
cgaagcacct cctctctctg actttccgcc ttcccgctgc gaccccggtt ttgcccctct
60
ccagctccct cagccgcggg cacctgagct ctccgcggcc accaggggg gcccgcggcc
120
cagtctgggc gcgagagccg ccaagcgccc actccgttcc tcctggtgcc ccgccccgtc
180
cggccgcggc cccgcccctc ccggcgcccc gccccgtccg gcagcggcct cgctccctcc
240
gatccccccc gcgcccggga cccctggccc cactgttggg ccagctcgcc gggtccggcc
300
atgggccccg ccgctcgccc cgcgctgaga tcgccgccgc cgcctccgcc gccgcctccg
360
tctccgctgc tgctgctgct gcccctgctg ccgctgtggc tgggcctggc ggggcccggg
420
```

gccgcggcgg acggcagcga gccggcggcc ggggcggggc ggggcggagc ccgcgccgtg
480
cgggtggacg tgagactgcc gcgccaggac gctctggtcc tggagggcgt caggatcggc
540
tccgaagccg accggcgcc cctgctgggc ggtcgtctgc tgctgatgga tgtcgtggat
600
gctgagcagg aggcacccgc agatggctgg attgcagtgg catatgtggg caaggagcag
660
gcggcccagt tccaccagga gaataagggc agtggcccgc aggcctatcc caaggccctg
720
gtccagcaga tgcggcgggc cctcttcctg ggtgcctctg ccctgcttct tctcatcctg
780
aaccacaacg tggtccgaga gctggacata tcccagcttc tgctcaggcc agtgatcgtc
840
ctccattatt cctccaatgt caccaagctg ttggatgcat tgctgcagag gacccaggcc
900
acggctgaga tcaccagcgg agagtccctg tctgccaata tcgagtggaa gttgaccttg
960
tggaccacct gtggcctctc caaggatggc tatggaggat ggcaggactt ggtctgcctt
1020
ggaggcagtc gtgcccagga gcagaaaccc ctgcagcagc tgtggaacgc catcctgctg
1080
gtggccatgc tcctgtgcac aggcctcgtg gtccaggccc agcggcaggc gtcgcggcag
1140
agccagcggg agctcggagg ccaggtggac ctgtttaagc gccgcgtggt gcggagactg
1200
gcatccctca agacacggcg ctgccggctg agcagggcag cgcagggcct cccagatccg
1260
ggtgctgaga cctgtgcggt gtgcctggac tacttctgca acaaacaggc tagtgccccg
1320
gtggctccgg gtgctgccct gtaagcacga gtttcaccga gactgtgtgg acccctggct
1380
gatgctccag cagacctgcc cactgtgcaa attcaacgtc ctgggtgagc accaggggtg
1440
gggtccctcg gcctactctg cctgctcctc acctgatgcc tctctccctg ttcttcttcc
1500
cctcccctgc agggaaccgc tactccgatg attagctgcc cagc
1544

<210> 4918
<211> 347
<212> PRT
<213> Homo sapiens

<400> 4918
Met Gly Pro Ala Ala Arg Pro Ala Leu Arg Ser Pro Pro Pro Pro Pro
1   5   10   15
Pro Pro Pro Pro Ser Pro Leu Leu Leu Leu Leu Pro Leu Leu Pro Leu
            20   25   30
Trp Leu Gly Leu Ala Gly Pro Gly Ala Ala Ala Asp Gly Ser Glu Pro
        35   40   45
Ala Ala Gly Ala Gly Arg Gly Gly Ala Arg Ala Val Arg Val Asp Val
        50   55   60
Arg Leu Pro Arg Gln Asp Ala Leu Val Leu Glu Gly Val Arg Ile Gly

```
                    65                      70                      75                      80
        Ser Glu Ala Asp Pro Ala Pro Leu Leu Gly Gly Arg Leu Leu Leu Met
                            85                      90                      95
        Asp Val Val Asp Ala Glu Gln Glu Ala Pro Ala Asp Gly Trp Ile Ala
                        100                     105                     110
        Val Ala Tyr Val Gly Lys Glu Gln Ala Ala Gln Phe His Gln Glu Asn
                    115                     120                     125
        Lys Gly Ser Gly Pro Gln Ala Tyr Pro Lys Ala Leu Val Gln Gln Met
                130                     135                     140
        Arg Arg Ala Leu Phe Leu Gly Ala Ser Ala Leu Leu Leu Leu Ile Leu
        145                     150                     155                     160
        Asn His Asn Val Val Arg Glu Leu Asp Ile Ser Gln Leu Leu Leu Arg
                            165                     170                     175
        Pro Val Ile Val Leu His Tyr Ser Ser Asn Val Thr Lys Leu Leu Asp
                        180                     185                     190
        Ala Leu Leu Gln Arg Thr Gln Ala Thr Ala Glu Ile Thr Ser Gly Glu
                    195                     200                     205
        Ser Leu Ser Ala Asn Ile Glu Trp Lys Leu Thr Leu Trp Thr Thr Cys
                210                     215                     220
        Gly Leu Ser Lys Asp Gly Tyr Gly Gly Trp Gln Asp Leu Val Cys Leu
        225                     230                     235                     240
        Gly Gly Ser Arg Ala Gln Glu Gln Lys Pro Leu Gln Gln Leu Trp Asn
                            245                     250                     255
        Ala Ile Leu Leu Val Ala Met Leu Leu Cys Thr Gly Leu Val Val Gln
                        260                     265                     270
        Ala Gln Arg Gln Ala Ser Arg Gln Ser Gln Arg Glu Leu Gly Gly Gln
                    275                     280                     285
        Val Asp Leu Phe Lys Arg Arg Val Val Arg Arg Leu Ala Ser Leu Lys
                290                     295                     300
        Thr Arg Arg Cys Arg Leu Ser Arg Ala Ala Gln Gly Leu Pro Asp Pro
        305                     310                     315                     320
        Gly Ala Glu Thr Cys Ala Val Cys Leu Asp Tyr Phe Cys Asn Lys Gln
                            325                     330                     335
        Ala Ser Ala Pro Val Ala Pro Gly Ala Ala Leu
                        340                     345
```

```
<210> 4919
<211> 1362
<212> DNA
<213> Homo sapiens

<400> 4919
ncggaggcgg gcacttgggg ggaaagttga gacgtgatta ccgggttggg cgggccccat
60
ctgggagggg tttgtgggtg aactcggggt ccaccgcccg ctgaggagat ggatgaggac
120
gggcttcctc tcatggggtc aggcatagac ctgaccaagg tgccagctat tcaacagaaa
180
agaacggtgg cttttctaaa ccaatttgtg gtgcacactg tacagttcct caaccgcttt
240
tctacagttt gtgaggagaa actggcagac ctttcacttc gtatccaaca aattgaaaca
300
actctcaata ttttagatgc aaagttgtca tctatcccag gcctagatga tgtcacagtt
360
```

gaagtatctc ctttaaatgt caccagtgtc acaaatggag cacatcctga agccacttca
420

gagcaaccac agcagaacag tacacaagac tctggactac aggaaagtga agtatcagca
480

gaaaatatct taactgtagc caaggatcca agatatgcca gatatctcaa aatggttcaa
540

gtgggtgtac cagtgatggc aataagaaac aaaatgatat cagaaggact agacccagat
600

cttcttgaga ggccagatgc tccagtgcct gatggcgaaa gtgagaaaac tgtagaagaa
660

agttcagata gcgaatcttc ttttagtgat taagcttaat tttgataaga attacatatg
720

catgcatagg ggtacattta cattctgtaa gagattgagc ctgaactctc ttagtcataa
780

aaacatcaaa tggccacatg tccactacca agcttcttct atgttaaaaa aataataata
840

aagcagtttt aacctgccca gtatgtcttg ttgctaaaat aanggccctc aaattgaaaa
900

ttnggatacc ctaaataaag taccaattag tgctccaaat actaagatag aatattttag
960

agatgcaatg agcaattaca gtcaggcacg ggttgtcacg cctgtaatcc cagcactttg
1020

ggaggccgag gcgagtggat aacctgaggt caggagttca agaccagcct ggccaacatg
1080

gtgaaacctc catctctact aaaaatacaa aaagtagctg ggcgtggtga caaaaattag
1140

ctgggcgtag tggcaggtgc ctgtaatccc agctactcgg gaagctgagg caggagaatc
1200

acttgaaccc agaaggtaaa ggtttcagtg agctgagatt gcgtcattgc actccagcca
1260

tggcgacaag agtgaaactc tgtcttaaaa ataaaaagag atgcaatgag caattttaaa
1320

tgaagtcagt gtgagtttag tgatcaatag tagacccaat gc
1362

<210> 4920
<211> 194
<212> PRT
<213> Homo sapiens

<400> 4920
Met Asp Glu Asp Gly Leu Pro Leu Met Gly Ser Gly Ile Asp Leu Thr
1   5   10   15
Lys Val Pro Ala Ile Gln Gln Lys Arg Thr Val Ala Phe Leu Asn Gln
            20   25   30
Phe Val Val His Thr Val Gln Phe Leu Asn Arg Phe Ser Thr Val Cys
            35   40   45
Glu Glu Lys Leu Ala Asp Leu Ser Leu Arg Ile Gln Gln Ile Glu Thr
        50   55   60
Thr Leu Asn Ile Leu Asp Ala Lys Leu Ser Ser Ile Pro Gly Leu Asp
65   70   75   80
Asp Val Thr Val Glu Val Ser Pro Leu Asn Val Thr Ser Val Thr Asn
                85   90   95
Gly Ala His Pro Glu Ala Thr Ser Glu Gln Pro Gln Gln Asn Ser Thr

```
            100                   105                   110
Gln Asp Ser Gly Leu Gln Glu Ser Glu Val Ser Ala Glu Asn Ile Leu
        115                   120                   125
Thr Val Ala Lys Asp Pro Arg Tyr Ala Arg Tyr Leu Lys Met Val Gln
    130                   135                   140
Val Gly Val Pro Val Met Ala Ile Arg Asn Lys Met Ile Ser Glu Gly
145                   150                   155                   160
Leu Asp Pro Asp Leu Leu Glu Arg Pro Asp Ala Pro Val Pro Asp Gly
                165                   170                   175
Glu Ser Glu Lys Thr Val Glu Glu Ser Ser Asp Ser Glu Ser Ser Phe
            180                   185                   190
Ser Asp
```

<210> 4921
<211> 1272
<212> DNA
<213> Homo sapiens

<400> 4921

nggttggtag cttctatcct gggggctgag cgactgcggg ccagctcttc ccctactccc
60

tctcggctcc ttgtggccca aaggccctaa ccggggtccg gcggtctgtg ccctagggta
120

tcttccccgt tgcccctttg gggcgggatg gctgcggaag aagaagacga ggtggagtgg
180

gtagtggaga gcatcgcggg gctcctgcga ggcccagact ggtccatccc catcttggac
240

tttgtggaac agaaatgtga agtttttgat gatgaagaag aaagcaaatt gacctataca
300

gagattcatc aggaatacaa agaactagtt gaaaagctgt tagaaggtta cctcaaagaa
360

attggaatta atgaagatca atttcaagaa gcatgcactt ctcctcttgc aaagacccat
420

acatcacagg ccattttgca acctgtgttg gcagcagaag attttactat cttttaaagca
480

atgatggtcc agaaaaacat tgaaatgcag ctgcaagcca ttcgaataat tcaagagaga
540

aatggtgtat tacctgactg cttaaccgat ggctctgatg tggtcagtga ccttgaacac
600

gaagagatga aatcctgag ggaagttctt agaaaatcaa agaggaata tgaccaggaa
660

gaagaaagga agaggaaaaa acagttatca gaggctaaaa cagaagagcc cacagtgcat
720

tccagtgaag ctgcaataat gaataattcc caaggggatg gtgaacattt tgcacaccca
780

ccctcagaag ttaaaatgca ttttgctaat cagtcaatag aacctttggg aagaaaagtg
840

gaaaggtctg aaacttcctc cctcccacaa aaaggcctga agattcctgg cttagagcat
900

gcgagcattg aaggaccaat agcaaactta tcagtacttg aacagaaga acttcggcaa
960

cgagaacact atctcaagca gaagagagat aagttgatgt ccatgagaaa ggatatgagg
1020
```

```
actaaacaga tacaaaatat ggagcagaaa ggaaaaccca ctggggaggt agaggaaatg
1080
acagagaaac cagaaatgac agcagaggag aagcaaacat tactaaagag gagattgctt
1140
gcagagaaac tcaaagaaga agttattaat aagtaataat taagaacaat ttaacaaaat
1200
ggaagttcaa attgtcttaa aaataaatta tttagtcctt acactgaaaa aaaaaaaaaa
1260
aaaaaataaa aa
1272
```

<210> 4922
<211> 342
<212> PRT
<213> Homo sapiens

<400> 4922

```
Met Ala Ala Glu Glu Glu Asp Glu Val Glu Trp Val Val Glu Ser Ile
 1               5                  10                 15
Ala Gly Leu Leu Arg Gly Pro Asp Trp Ser Ile Pro Ile Leu Asp Phe
              20                  25                 30
Val Glu Gln Lys Cys Glu Val Phe Asp Asp Glu Glu Glu Ser Lys Leu
          35                  40                 45
Thr Tyr Thr Glu Ile His Gln Glu Tyr Lys Glu Leu Val Glu Lys Leu
      50                  55                 60
Leu Glu Gly Tyr Leu Lys Glu Ile Gly Ile Asn Glu Asp Gln Phe Gln
65                  70                  75                 80
Glu Ala Cys Thr Ser Pro Leu Ala Lys Thr His Thr Ser Gln Ala Ile
              85                  90                 95
Leu Gln Pro Val Leu Ala Ala Glu Asp Phe Thr Ile Phe Lys Ala Met
          100                 105                110
Met Val Gln Lys Asn Ile Glu Met Gln Leu Gln Ala Ile Arg Ile Ile
          115                 120                125
Gln Glu Arg Asn Gly Val Leu Pro Asp Cys Leu Thr Asp Gly Ser Asp
      130                 135                 140
Val Val Ser Asp Leu Glu His Glu Glu Met Lys Ile Leu Arg Glu Val
145                 150                 155                160
Leu Arg Lys Ser Lys Glu Glu Tyr Asp Gln Glu Glu Glu Arg Lys Arg
              165                 170                175
Lys Lys Gln Leu Ser Glu Ala Lys Thr Glu Glu Pro Thr Val His Ser
          180                 185                190
Ser Glu Ala Ala Ile Met Asn Asn Ser Gln Gly Asp Gly Glu His Phe
          195                 200                205
Ala His Pro Pro Ser Glu Val Lys Met His Phe Ala Asn Gln Ser Ile
      210                 215                220
Glu Pro Leu Gly Arg Lys Val Glu Arg Ser Glu Thr Ser Ser Leu Pro
225                 230                 235                240
Gln Lys Gly Leu Lys Ile Pro Gly Leu Glu His Ala Ser Ile Glu Gly
              245                 250                255
Pro Ile Ala Asn Leu Ser Val Leu Gly Thr Glu Glu Leu Arg Gln Arg
          260                 265                270
Glu His Tyr Leu Lys Gln Lys Arg Asp Lys Leu Met Ser Met Arg Lys
      275                 280                285
Asp Met Arg Thr Lys Gln Ile Gln Asn Met Glu Gln Lys Gly Lys Pro
```

4095

```
            290                    295                    300
    Thr Gly Glu Val Glu Glu Met Thr Glu Lys Pro Glu Met Thr Ala Glu
    305                    310                    315                    320
    Glu Lys Gln Thr Leu Leu Lys Arg Arg Leu Leu Ala Glu Lys Leu Lys
                        325                    330                    335
    Glu Glu Val Ile Asn Lys
                    340
```

<210> 4923
<211> 765
<212> DNA
<213> Homo sapiens

<400> 4923

```
tctccagccc cggatgaggg gcctcaggct tcggctgggc cacaggaggt ggggtctctg
60
aagccttctg ctcctnctcc aaggacctca tttagctccg ccagcaggtc atcatcagcc
120
tccaagtcgt cctcatccgt cccctcctcc tcatcctcat ccgggtctct catgcacagg
180
ctggccatct tctcaatggc ctccatcggc aagggacctt tgcctttgag cttctccagg
240
gctgggggct ggccccgac caaagccaag aactcagcct ccagttcttc atcgttagcc
300
ccgtcctcag ggatcatcag gccatctggg gagaggtcaa ccagcaggcc cagctggcgg
360
gcggccgcgg cgcctctgcc cgggggtccc ggggtcctt cctcttgtgc atcttcaagg
420
ctggatgccc ggaccacctg cccccaagcc cggccttgcc ctgccccttc cccgggctct
480
gtcgccgcgc actcgccctt cctgagtcct gcactcctcg tcggcgccct gcggccggtc
540
gatcccgagc cctcgcttcc ctgcttggcc gtcccacttc cgcctcgggc ctcgggcgcc
600
gccgcacctn ggagcgcggc cagctgggct cgccgaggtc tgccgagccg aaactacaac
660
tcccggcaga tttctcaagg ggaagataaa atgactaaga ggaagaagct gcggacctca
720
gctccctga tgaggaaaca ggatctccct gccggctcct ccgtc
765
```

<210> 4924
<211> 255
<212> PRT
<213> Homo sapiens

<400> 4924

```
    Ser Pro Ala Pro Asp Glu Gly Pro Gln Ala Ser Ala Gly Pro Gln Glu
    1                    5                    10                    15
    Val Gly Ser Leu Lys Pro Ser Ala Pro Xaa Pro Arg Thr Ser Phe Ser
                        20                    25                    30
    Ser Ala Ser Arg Ser Ser Ser Ala Ser Lys Ser Ser Ser Ser Val Pro
                        35                    40                    45
    Ser Ser Ser Ser Ser Ser Gly Ser Leu Met His Arg Leu Ala Ile Phe
```

```
        50                  55                  60
Ser Met Ala Ser Ile Gly Lys Gly Pro Leu Pro Leu Ser Phe Ser Arg
65                  70                  75                  80
Ala Gly Gly Trp Pro Pro Thr Lys Ala Lys Asn Ser Ala Ser Ser Ser
                85                  90                  95
Ser Ser Leu Ala Pro Ser Ser Gly Ile Ile Arg Pro Ser Gly Glu Arg
            100                 105                 110
Ser Thr Ser Arg Pro Ser Trp Arg Ala Ala Ala Ala Pro Leu Pro Gly
            115                 120                 125
Gly Pro Gly Gly Pro Ser Ser Cys Ala Ser Ser Arg Leu Asp Ala Arg
            130                 135                 140
Thr Thr Cys Pro Gln Ala Arg Pro Cys Pro Ala Pro Ser Pro Gly Ser
145                 150                 155                 160
Val Ala Ala His Ser Pro Phe Leu Ser Pro Ala Leu Leu Val Gly Ala
                165                 170                 175
Leu Arg Pro Val Asp Pro Glu Pro Ser Leu Pro Cys Leu Ala Val Pro
            180                 185                 190
Leu Pro Pro Arg Ala Ser Gly Ala Ala Ala Pro Xaa Ser Ala Ala Ser
            195                 200                 205
Trp Ala Arg Arg Gly Leu Pro Ser Arg Asn Tyr Asn Ser Arg Gln Ile
        210                 215                 220
Ser Gln Gly Glu Asp Lys Met Thr Lys Arg Lys Lys Leu Arg Thr Ser
225                 230                 235                 240
Ala Pro Leu Met Arg Lys Gln Asp Leu Pro Ala Gly Ser Ser Val
                245                 250                 255
```

<210> 4925
<211> 374
<212> DNA
<213> Homo sapiens

<400> 4925
gccaatttgg agaaagagct ccaggagatg gaggcacggt acgagaagga gtttggagat
60
ggatcggatg aaaatgaaat ggaagaacat gaactcaaag atgaggagga tggtaaagac
120
agtgatgagg ccgaggacgc tgagctctat gatgaccttt actgcccagc atgtgacaaa
180
tcgttcaaga cagaaaggc catgaagaat cacgagaagt caaagaagca tcgggaaatg
240
gtggccttgc taaaacaaca gctggaggag gaagaagaaa atttttcaag acctcaaatt
300
gatgaaaatc cattagatga caattctgag gaagaaatgg aagatgcacc aaaacaaaag
360
ctttctaaaa aaaa
374

<210> 4926
<211> 124
<212> PRT
<213> Homo sapiens

<400> 4926
Ala Asn Leu Glu Lys Glu Leu Gln Glu Met Glu Ala Arg Tyr Glu Lys

4097

```
  1                     5                    10                   15
Glu Phe Gly Asp Gly Ser Asp Glu Asn Glu Met Glu Glu His Glu Leu
              20                   25                   30
Lys Asp Glu Glu Asp Gly Lys Asp Ser Asp Glu Ala Glu Asp Ala Glu
              35                   40                   45
Leu Tyr Asp Asp Leu Tyr Cys Pro Ala Cys Asp Lys Ser Phe Lys Thr
          50                   55                   60
Glu Lys Ala Met Lys Asn His Glu Lys Ser Lys Lys His Arg Glu Met
65                   70                   75                   80
Val Ala Leu Leu Lys Gln Gln Leu Glu Glu Glu Glu Glu Asn Phe Ser
                  85                   90                   95
Arg Pro Gln Ile Asp Glu Asn Pro Leu Asp Asp Asn Ser Glu Glu Glu
              100                  105                  110
Met Glu Asp Ala Pro Lys Gln Lys Leu Ser Lys Lys
          115                  120
```

<210> 4927
<211> 1649
<212> DNA
<213> Homo sapiens

<400> 4927
atccaccgct gagctgggag aaagatggcg gccgtgcgac aggatttggc ccagctcatg
60
aattcgagcg gctctcataa agatctggct ggcaagtatc gtcagatcct ggaaaaagcc
120
attcagttat ctggagcaga caactagaa gctttgaaag cttttgtgga agcaatggta
180
aatgagaatg tcagtctcgt gatctcgcgg cagttgctga ctgatttttg cacacatctt
240
cctaacttgc ctgatagcac agccaaagaa atctatcact tcaccttgga aaagatccag
300
cctagagtca tttcatttga ggagcaggtt gcttccataa gacagcatct tgcatctata
360
tatgagaaag aagaagattg gagaaatgca gcccaagtgt tggtgggaat tcctttggaa
420
acaggacaaa aacagtacaa tgtagattat aaactggaga cttacttgaa gattgctagg
480
ctatatctgg aggatgatga tccagtccag gcagaggctt acataaatcg agcatcgttg
540
cttcagaatg aatcaaccaa tgaacaatta cagatacatt ataaggtatg ctatgcacgt
600
gttcttgatt atagaagaaa attcattgaa gctgcacaaa ggtacaatga gctctcttac
660
aagacaatag tccacgaaag tgaaagacta gaggccttaa acatgctttt gcactgtacg
720
atcttagcat cagcaggaca gcagcgttct cggatgctgg ctacccttttt taaggatgaa
780
aggtgccagc aacttgctgc ttatgggatc ctagagaaaa tgtatctaga caggatcatc
840
agagggaacc agcttcaaga atttgctgcc atgctgatgc ctcaccaaaa agcaactaca
900
gctgatggtt ccagcatctt ggacagagct gttattgaac acaatttgtt gtctgcaagc
960

```
aaattatata ataatattac cttcgaagaa cttggagctc ttttagagat ccctgcagct
1020
aaggcggaaa agatagcatc tcaaatgata accgaaggac gtatgaatgg atttattgac
1080
cagattgatg gaatagttca ttttgaaaca cgagaagccc tgccaacgtg ggataagcag
1140
atccaatcac tttgtttcca agtgaataac cttttggaga aaattagtca aacagcacca
1200
gaatggacag cacaagccat ggaagcccag atggctcagt gaatccttgc agaacttctg
1260
tgcacatgac atcttttttcc atgttgtgca gatcagtttc actatctcca aagcatttgc
1320
atcatgacct tatacatttc aatcccttt atgctggatt ccgtttaaag aagacattat
1380
tagagcagga agtacaagca tttaaaatat gtagttccca tatatttcag ggtctctgtg
1440
tattaagcta actcagatgt tttgaaagct ttttcttaa acagaggtga aatatctgtg
1500
gctaaaaagt ttgagatttg tgataacttt gtagtcatgt aaaacttaag tgcttcatgc
1560
ctctccaaat gtggttattc taataaatgg agaaatgagc caaaaaaaag tagtactttg
1620
ttttaaaaa aaaaaaaaaa aaaaaaaaa
1649
```

```
<210> 4928
<211> 405
<212> PRT
<213> Homo sapiens
```

```
<400> 4928
Met Ala Ala Val Arg Gln Asp Leu Ala Gln Leu Met Asn Ser Ser Gly
1               5                   10                  15
Ser His Lys Asp Leu Ala Gly Lys Tyr Arg Gln Ile Leu Glu Lys Ala
                20                  25                  30
Ile Gln Leu Ser Gly Ala Glu Gln Leu Glu Ala Leu Lys Ala Phe Val
            35                  40                  45
Glu Ala Met Val Asn Glu Asn Val Ser Leu Val Ile Ser Arg Gln Leu
        50                  55                  60
Leu Thr Asp Phe Cys Thr His Leu Pro Asn Leu Pro Asp Ser Thr Ala
65                  70                  75                  80
Lys Glu Ile Tyr His Phe Thr Leu Glu Lys Ile Gln Pro Arg Val Ile
                85                  90                  95
Ser Phe Glu Glu Gln Val Ala Ser Ile Arg Gln His Leu Ala Ser Ile
            100                 105                 110
Tyr Glu Lys Glu Glu Asp Trp Arg Asn Ala Ala Gln Val Leu Val Gly
        115                 120                 125
Ile Pro Leu Glu Thr Gly Gln Lys Gln Tyr Asn Val Asp Tyr Lys Leu
    130                 135                 140
Glu Thr Tyr Leu Lys Ile Ala Arg Leu Tyr Leu Glu Asp Asp Asp Pro
145                 150                 155                 160
Val Gln Ala Glu Ala Tyr Ile Asn Arg Ala Ser Leu Leu Gln Asn Glu
                165                 170                 175
Ser Thr Asn Glu Gln Leu Gln Ile His Tyr Lys Val Cys Tyr Ala Arg
```

4099

```
                180                 185                 190
Val Leu Asp Tyr Arg Arg Lys Phe Ile Glu Ala Ala Gln Arg Tyr Asn
            195                 200                 205
Glu Leu Ser Tyr Lys Thr Ile Val His Glu Ser Glu Arg Leu Glu Ala
        210                 215                 220
Leu Lys His Ala Leu His Cys Thr Ile Leu Ala Ser Ala Gly Gln Gln
225                 230                 235                 240
Arg Ser Arg Met Leu Ala Thr Leu Phe Lys Asp Glu Arg Cys Gln Gln
                245                 250                 255
Leu Ala Ala Tyr Gly Ile Leu Glu Lys Met Tyr Leu Asp Arg Ile Ile
            260                 265                 270
Arg Gly Asn Gln Leu Gln Glu Phe Ala Ala Met Leu Met Pro His Gln
        275                 280                 285
Lys Ala Thr Thr Ala Asp Gly Ser Ser Ile Leu Asp Arg Ala Val Ile
    290                 295                 300
Glu His Asn Leu Leu Ser Ala Ser Lys Leu Tyr Asn Asn Ile Thr Phe
305                 310                 315                 320
Glu Glu Leu Gly Ala Leu Leu Glu Ile Pro Ala Ala Lys Ala Glu Lys
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Ile Ala Ser Gln Met Ile Thr Glu Gly Arg Met Asn Gly Phe Ile Asp
            340                 345                 350
Gln Ile Asp Gly Ile Val His Phe Glu Thr Arg Glu Ala Leu Pro Thr
        355                 360                 365
Trp Asp Lys Gln Ile Gln Ser Leu Cys Phe Gln Val Asn Asn Leu Leu
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<210> 4929
<211> 5907
<212> DNA
<213> Homo sapiens

<400> 4929

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4102

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<211> 648
<212> PRT
<213> Homo sapiens

<400> 4930
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Val Gln Gln Phe Gly Tyr Gln Arg Arg Ala Ser Asp Asp Gly Lys Leu
        35   40   45
Thr Asp Pro Ser Lys Thr Ser Asn Thr Ile Arg Val Phe Leu Pro Asn
    50   55   60
Lys Gln Arg Thr Val Val Asn Val Arg Asn Gly Met Ser Leu His Asp
65   70   75   80
Cys Leu Met Lys Ala Leu Lys Val Arg Gly Leu Gln Pro Glu Cys Cys
                85   90   95
Ala Val Phe Arg Leu Leu His Glu His Lys Gly Lys Lys Ala Arg Leu
            100   105   110
Asp Trp Asn Thr Asp Ala Ala Ser Leu Ile Gly Glu Glu Leu Gln Val
        115   120   125
Asp Phe Leu Asp His Val Pro Leu Thr Thr His Asn Phe Ala Arg Lys
    130   135   140
Thr Phe Leu Lys Leu Ala Phe Cys Asp Ile Cys Gln Lys Phe Leu Leu
145   150   155   160
Asn Gly Phe Arg Cys Gln Thr Cys Gly Tyr Lys Phe His Glu His Cys
                165   170   175
Ser Thr Lys Val Pro Thr Met Cys Val Asp Trp Ser Asn Ile Arg Gln
            180   185   190
Leu Leu Leu Phe Pro Asn Ser Thr Ile Gly Asp Ser Gly Val Pro Ala
        195   200   205
Leu Pro Ser Leu Thr Met Arg Arg Met Arg Glu Ser Val Ser Arg Met
    210   215   220
Pro Val Ser Ser Gln His Arg Tyr Ser Thr Pro His Ala Phe Thr Phe

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Asp Ser Arg Met Ile Glu Asp Ala Ile Arg Ser His Ser Glu Ser Ala
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Ser Pro Ser Ala Leu Ser Ser Ser Pro Asn Asn Leu Ser Pro Thr Gly
     290                    295                    300
Trp Ser Gln Pro Lys Thr Pro Val Pro Ala Gln Arg Glu Arg Ala Pro
305                    310                    315                    320
Val Ser Gly Thr Gln Glu Lys Asn Lys Ile Arg Pro Arg Gly Gln Arg
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Asp Ser Ser Tyr Tyr Trp Glu Ile Glu Ala Ser Glu Val Met Leu Ser
             340                    345                    350
Thr Arg Ile Gly Ser Gly Ser Phe Gly Thr Val Tyr Lys Gly Lys Trp
         355                    360                    365
His Gly Asp Val Ala Val Lys Ile Leu Lys Val Val Asp Pro Thr Pro
     370                    375                    380
Glu Gln Phe Gln Ala Phe Arg Asn Glu Val Ala Val Leu Arg Lys Thr
385                    390                    395                    400
Arg His Val Asn Ile Leu Leu Phe Met Gly Tyr Met Thr Lys Asp Asn
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Leu Ala Ile Val Thr Gln Trp Cys Glu Gly Ser Ser Leu Tyr Lys His
             420                    425                    430
Leu His Val Gln Glu Thr Lys Phe Gln Met Phe Gln Leu Ile Asp Ile
             435                    440                    445
Ala Arg Gln Thr Ala Gln Gly Met Asp Tyr Leu His Ala Lys Asn Ile
     450                    455                    460
Ile His Arg Asp Met Lys Ser Asn Asn Ile Phe Leu His Glu Gly Leu
465                    470                    475                    480
Thr Val Lys Ile Gly Asp Phe Gly Leu Ala Thr Val Lys Ser Arg Trp
                 485                    490                    495
Ser Gly Ser Gln Gln Val Glu Gln Pro Thr Gly Ser Val Leu Trp Met
             500                    505                    510
Ala Pro Glu Val Ile Arg Met Gln Asp Asn Asn Pro Phe Ser Phe Gln
         515                    520                    525
Ser Asp Val Tyr Ser Tyr Gly Ile Val Leu Tyr Glu Leu Met Thr Gly
     530                    535                    540
Glu Leu Pro Tyr Ser His Ile Asn Asn Arg Asp Gln Ile Ile Phe Met
545                    550                    555                    560
Val Gly Arg Gly Tyr Ala Ser Pro Asp Leu Ser Lys Leu Tyr Lys Asn
                 565                    570                    575
Cys Pro Lys Ala Met Lys Arg Leu Val Ala Asp Cys Val Lys Lys Val
             580                    585                    590
Lys Glu Glu Arg Pro Leu Phe Pro Gln Ile Leu Ser Ser Ile Glu Leu
         595                    600                    605
Leu Gln His Ser Leu Pro Lys Ile Asn Arg Ser Ala Ser Glu Pro Ser
     610                    615                    620
Leu His Arg Ala Ala His Thr Glu Asp Ile Asn Ala Cys Thr Leu Thr
625                    630                    635                    640
Thr Ser Pro Arg Leu Pro Val Phe
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<211> 261
<212> DNA
<213> Homo sapiens

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<210> 4932
<211> 87
<212> PRT
<213> Homo sapiens

<400> 4932
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            20                  25                  30
Thr Gln Gly Thr Arg Lys Ile Leu Tyr Pro Tyr Ala His Leu Ser Ala
        35                  40                  45
Glu Asp Phe Asn Ile Tyr Gly His Gly Gly Arg Gln Phe Trp Leu Val
    50                  55                  60
Ser Ser Cys Phe Phe Phe Leu Leu Gly Gly Ala Ser Thr Cys Met Arg
65                  70                  75                  80
Ala Ser Trp His Arg Ser Thr
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<210> 4933
<211> 975
<212> DNA
<213> Homo sapiens

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360
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<210> 4934
<211> 181
<212> PRT
<213> Homo sapiens

<400> 4934
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Ala Tyr Ile Glu Ser Gln Gly Ala His Arg Ala Gly Leu Ala Lys Ile
        35   40   45
Ile Pro Pro Lys Glu Trp Lys Pro Arg Gln Thr Tyr Asp Asp Ile Asp
    50   55   60
Asp Val Val Ile Pro Ala Pro Ile Gln Gln Val Val Thr Gly Gln Ser
65   70   75   80
Gly Leu Phe Thr Gln Tyr Asn Ile Gln Lys Lys Ala Met Thr Val Gly
            85   90   95
Glu Tyr Arg Arg Leu Ala Asn Ser Glu Lys Tyr Cys Thr Pro Arg His
            100   105   110
Gln Asp Phe Asp Asp Leu Glu Arg Lys Tyr Trp Lys Asn Leu Thr Phe
            115   120   125
Val Ser Pro Ile Tyr Gly Ala Asp Ile Ser Gly Ser Leu Tyr Asp Asp
        130   135   140
Val Ser Met Arg Leu Arg Gly Arg Thr Gly Thr Ser Phe Leu Val Gly
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Gly Gly Gly Arg Ala Leu Asn Gly Thr Leu Pro Trp Gln Met Lys Leu
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<210> 4935
<211> 1668
<212> DNA
<213> Homo sapiens

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1440

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<210> 4936
<211> 337
<212> PRT
<213> Homo sapiens

<400> 4936

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		35				40					45				
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Val	Ile	Ala	Arg	Gly	His	Gly	His	Lys	Ser	Trp	Val	Ser	Val	Val	Ala
65				70					75						80
Phe	Asp	Pro	Tyr	Thr	Thr	Ser	Val	Glu	Glu	Gly	Asp	Pro	Met	Glu	Phe
				85					90					95	
Ser	Gly	Ser	Asp	Glu	Asp	Phe	Gln	Asp	Leu	Leu	His	Phe	Gly	Glu	Ile
			100					105					110		
Glu	Gln	Ile	Val	His	Ser	Pro	Gly	Ser	Pro	Asn	Gly	Thr	Leu	Gln	Thr
		115					120					125			
Ala	Ala	Pro	Ser	Val	Thr	Tyr	Arg	Phe	Gly	Ser	Val	Gly	Gln	Asp	Thr
	130					135					140				
Gln	Leu	Cys	Leu	Trp	Asp	Leu	Thr	Glu	Asp	Ile	Leu	Phe	Pro	His	Gln
145					150					155					160
Pro	Leu	Ser	Arg	Ala	Arg	Thr	His	Thr	Asn	Val	Met	Asn	Ala	Thr	Ser
			165					170					175		
Pro	Pro	Ala	Gly	Ser	Asn	Gly	Asn	Ser	Val	Thr	Thr	Pro	Gly	Asn	Ser
		180					185					190			
Val	Pro	Pro	Pro	Leu	Pro	Arg	Ser	Asn	Ser	Leu	Pro	His	Ser	Ala	Val
	195					200					205				
Ser	Asn	Ala	Gly	Ser	Lys	Ser	Ser	Val	Met	Asp	Gly	Ala	Ile	Ala	Ser
210					215					220					
Gly	Val	Ser	Lys	Phe	Ala	Thr	Leu	Ser	Leu	His	Asp	Arg	Lys	Glu	Arg
225					230					235					240
His	His	Glu	Lys	Asp	His	Lys	Arg	Asn	His	Ser	Met	Gly	His	Ile	Ser
				245					250					255	
Ser	Lys	Ser	Ser	Asp	Lys	Leu	Asn	Leu	Val	Thr	Lys	Thr	Lys	Thr	Asp
			260					265					270		
Pro	Ala	Lys	Thr	Leu	Gly	Thr	Pro	Leu	Cys	Pro	Arg	Met	Glu	Asp	Val
		275					280					285			
Pro	Leu	Leu	Glu	Pro	Leu	Ile	Cys	Lys	Lys	Ile	Ala	His	Glu	Arg	Leu
	290					295					300				
Thr	Val	Leu	Ile	Phe	Leu	Glu	Asp	Cys	Ile	Val	Thr	Ala	Cys	Gln	Glu
```

```
305                 310                 315                 320
Gly Phe Ile Cys Thr Trp Gly Arg Pro Gly Lys Val Val Ser Phe Asn
                    325                 330                 335
Pro
```

<210> 4937
<211> 715
<212> DNA
<213> Homo sapiens

<400> 4937

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tttctttctg tggtttcttc ctttttaatt actggaaggg ttttttccatt ttttctccta
60
gtgttccttt gtttgccagg gaatgtttcg ggaaggctgt ggagtgggac ggtggggatg
120
aagcggggag tcccacactc tctgggtcca ggcacaaagc tatcctccgt tgttctgatc
180
tgcagagcca gcgccctcag caggtaccta gtggtggcag agccgtggcc tacacgttcc
240
caaggaggcc gccagccggg ctgtacccttt accttggggg tgtgtgcaga tggaaggtgg
300
gaagagacag accaacagga agtgttctct tcaggggttg ccagccccac cctgaatctc
360
agagcatcct cctccccggc aaaggccagg gcactgtccc gaccatgggc tctgtacaag
420
cagagggagg cacccgagct ggtgtgagca gctacgtggg gtggtggtcc agggaacaga
480
gggagggcac tggagccatt gcctgcctag ttcagtcctc aaatgggtcc aagccagctc
540
aggtctgcag cgccaggccc agggtacctg gcagcccagc cgatggtacc attggctggt
600
gctcccactg aggtcttgag aaggtaatgg ggagagccac ttgcccctgc ctctgtcccc
660
agtggacttc tttttgttca aggccaaatg ccaccccgtc agagagagga ccggt
715
```

<210> 4938
<211> 109
<212> PRT
<213> Homo sapiens

<400> 4938

```
Met Lys Arg Gly Val Pro His Ser Leu Gly Pro Gly Thr Lys Leu Ser
1               5                  10                  15
Ser Val Val Leu Ile Cys Arg Ala Ser Ala Leu Ser Arg Tyr Leu Val
            20                 25                 30
Val Ala Glu Pro Trp Pro Thr Arg Ser Gln Gly Gly Arg Gln Pro Gly
        35                 40                 45
Cys Thr Leu Thr Leu Gly Val Cys Ala Asp Gly Arg Trp Glu Glu Thr
    50                 55                 60
Asp Gln Gln Glu Val Phe Ser Ser Gly Val Ala Ser Pro Thr Leu Asn
65                 70                 75                 80
Leu Arg Ala Ser Ser Ser Pro Ala Lys Ala Arg Ala Leu Ser Arg Pro
```

```
                         85                    90                   95
        Trp Ala Leu Tyr Lys Gln Arg Glu Ala Pro Glu Leu Val
                     100                   105


        <210> 4939
        <211> 730
        <212> DNA
        <213> Homo sapiens


        <400> 4939
        nnacgcgtcc acttttctag aagcccccca gcctccacca tggctcccat cccctctgcc
        60
        ctcgctgtct gggagcccgc gggatccagc ccacagctgt cctctgcgcc tgcagattcc
        120
        tcggcctcta cccgccctcc ccaaggtcct ccctccctgg actcaaaagc ctctacttgg
        180
        ctgcctctgc cagtcacctc ttcctctgct gagccctcca gaccaaattc ttgcccacct
        240
        gcatgctctc ctgctgctgc ctcttccttt tctttcgagt cccagccttg cccaagcgcc
        300
        ccttccaaag cttcaccagc gccagcagcg ctgatgtgtg ggaccacatc accccccata
        360
        atcccagcag ccacagagcc agtctgtgca tcctcacggt ccgggaggcc acagccacc
        420
        gcttgcagcc tccagcctct tctggatgtt ctgtcagcct ccgcctcctc atcctcagtt
        480
        tctctggcat aggcctctcc cagtgacggg caaggccctg cgtctgcccc tgtgcttccg
        540
        tccagctcct ggttctctga cacagatgcc tctccctcct cagttccaca tcccgcgtcc
        600
        tgggttgtca gcccctcccc gcctgcctct gggacttctg atagttcaga ctctcggtct
        660
        ccttcagcct cagccgccag ggcctggcct cccgcagtct cctcctcctc ccgctgctcg
        720
        ccatcggccg
        730


        <210> 4940
        <211> 158
        <212> PRT
        <213> Homo sapiens


        <400> 4940
        Ser Arg Ser Pro Pro Ala Ser Thr Met Ala Pro Ile Pro Ser Ala Leu
        1               5                   10                  15
        Ala Val Trp Glu Pro Ala Gly Ser Ser Pro Gln Leu Ser Ser Ala Pro
                    20                  25                  30
        Ala Asp Ser Ser Ala Ser Thr Arg Pro Pro Gln Gly Pro Pro Ser Leu
                35                  40                  45
        Asp Ser Lys Ala Ser Thr Trp Leu Pro Leu Pro Val Thr Ser Ser Ser
            50                  55                  60
        Ala Glu Pro Ser Arg Pro Asn Ser Cys Pro Pro Ala Cys Ser Pro Ala
        65                  70                  75                  80
        Ala Ala Ser Ser Phe Ser Phe Glu Ser Gln Pro Cys Pro Ser Ala Pro
```

```
                        85                    90                    95
Ser Lys Ala Ser Pro Ala Pro Ala Ala Leu Met Cys Gly Thr Thr Ser
                100               105               110
Pro Pro Ile Ile Pro Ala Ala Thr Glu Pro Val Cys Ala Ser Ser Arg
            115               120               125
Ser Gly Arg Pro Thr Ala Thr Ala Cys Ser Leu Gln Pro Leu Leu Asp
        130               135               140
Val Leu Ser Ala Ser Ala Ser Ser Ser Ser Val Ser Leu Ala
145               150               155
```

<210> 4941
<211> 1718
<212> DNA
<213> Homo sapiens

<400> 4941

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ntcatgaccg aggttgtggt ggccctgctc atgtgccccc tcccactgaa cagcaatgga
60
gcagagatgt ggaggcagct gatactgtgt aagcccagct gtgatgtccg agacctcctg
120
gatctgctcc tgggcagcct gaaggagaag cccgtcacca aggagggccg ggcttccatc
180
gtgcccctgg cggcagccag cggcctgtgc gagctcctgt ccgtcaacag ctgcatgggc
240
cgtgtgaggc gcatctaccc tcagctgctc ctggccctgc tcattcaggt ccattaccac
300
atcggcctca acctgcctgg ctgcgtggct cctcccaagg acaccaagaa gggtgcacag
360
ccctctccct tcgtacctgt gcgctgggtg gtgaaagtgg tgaaaaccct gctactgagg
420
atgggctgct cttatgagac cacgtttctg gaggaccagg gtggctggga gctcatggag
480
caggtggaga gccaccaccg cggagtggcc ttgctggcaa gggccatggt gcagtactcc
540
tgccaggagc tgtgccgcat cctctacctg ctcatcccgc tcctggagcg aggcgacgag
600
aagcacagga tcacggccac cgccttcttc gtggagctcc tccagatgga gcaggtgcgc
660
cggatccccg aggaatactc tctggggcgg atggcagaag gcctgagcca ccacgacccc
720
atcatgaagg tgctgtccat tcgaggcctg gtcatcctgg cccgcaggtc tgagaagacc
780
gccaaggtga aggccctcct gccttccatg gtgaagggcc tgaagaacat ggatgggatg
840
ctggtggtgg aagcggtcca caacctcaag gctgtcttca ggggcgggga ccagaagctg
900
atggacagtg cggtctatgt ggagatgctg cagatcctgc tgccgcactt cagcgacgca
960
cgagaggtcg tgcgctcctc ctgcatcaac ctgtatggga aggtggtcca gaagcttcgg
1020
gcaccacgca ctcaggccat ggaggagcag ctggtcagca ccttggtgcc cctactgctg
1080
accatgcagg agggcaactc caaggtaagc cagaagtgtg tgaagaccct gttacgctgt
1140
```

4112

tcttacttca tggcttggga gttgccaaaa agagcttata gccggaagcc ctgggacaac
1200

caacagcaga cagtggccaa aatttgcaag tgccttgtga acacccaccg agacagcgcc
1260

ttcatattcc tcagccagag cctggagtat gccaagaact cacgggcctc cctccggaag
1320

tgctcagtca tgttcatagg gtccctggtc ccctgcatgg agagcataat gacagaagat
1380

cgtctgaatg aagtgaaagc tgctctggat aacttgagac atgacccaga agcatcagtg
1440

tgcatctacg cagcccaggt ccaggaccac atcctggcca gctgctggca gaactcctgg
1500

ctgccgcacg ggaactcatg ggtgtgttac tcagccacca cccaccgctg gagccccagc
1560

tgtgagaacc tgcccacttc ccaccagcgg cgctcctgga tcatgcaggc actgggctcc
1620

tggaagatgt ccttgaagaa gtgacgtccc tgagccccaa accctcctca gggtggttga
1680

gttccagcca tgctccctat aaatgtcatg tggcttaa
1718

<210> 4942
<211> 469
<212> PRT
<213> Homo sapiens

<400> 4942
Met Gly Arg Val Arg Arg Ile Tyr Pro Gln Leu Leu Leu Ala Leu Leu
1   5   10   15
Ile Gln Val His Tyr His Ile Gly Leu Asn Leu Pro Gly Cys Val Ala
            20   25   30
Pro Pro Lys Asp Thr Lys Lys Gly Ala Gln Pro Ser Pro Phe Val Pro
        35   40   45
Val Arg Trp Val Val Lys Val Val Lys Thr Leu Leu Leu Arg Met Gly
        50   55   60
Cys Ser Tyr Glu Thr Thr Phe Leu Glu Asp Gln Gly Gly Trp Glu Leu
65   70   75   80
Met Glu Gln Val Glu Ser His His Arg Gly Val Ala Leu Leu Ala Arg
                85   90   95
Ala Met Val Gln Tyr Ser Cys Gln Glu Leu Cys Arg Ile Leu Tyr Leu
            100   105   110
Leu Ile Pro Leu Leu Glu Arg Gly Asp Glu Lys His Arg Ile Thr Ala
        115   120   125
Thr Ala Phe Phe Val Glu Leu Leu Gln Met Glu Gln Val Arg Arg Ile
        130   135   140
Pro Glu Glu Tyr Ser Leu Gly Arg Met Ala Glu Gly Leu Ser His His
145   150   155   160
Asp Pro Ile Met Lys Val Leu Ser Ile Arg Gly Leu Val Ile Leu Ala
                165   170   175
Arg Arg Ser Glu Lys Thr Ala Lys Val Lys Ala Leu Leu Pro Ser Met
            180   185   190
Val Lys Gly Leu Lys Asn Met Asp Gly Met Leu Val Val Glu Ala Val
        195   200   205
His Asn Leu Lys Ala Val Phe Lys Gly Arg Asp Gln Lys Leu Met Asp

```
        210                    215                    220
Ser Ala Val Tyr Val Glu Met Leu Gln Ile Leu Leu Pro His Phe Ser
225                    230                    235                    240
Asp Ala Arg Glu Val Val Arg Ser Ser Cys Ile Asn Leu Tyr Gly Lys
                   245                    250                    255
Val Val Gln Lys Leu Arg Ala Pro Arg Thr Gln Ala Met Glu Glu Gln
                   260                    265                    270
Leu Val Ser Thr Leu Val Pro Leu Leu Leu Thr Met Gln Glu Gly Asn
        275                    280                    285
Ser Lys Val Ser Gln Lys Cys Val Lys Thr Leu Leu Arg Cys Ser Tyr
        290                    295                    300
Phe Met Ala Trp Glu Leu Pro Lys Arg Ala Tyr Ser Arg Lys Pro Trp
305                    310                    315                    320
Asp Asn Gln Gln Gln Thr Val Ala Lys Ile Cys Lys Cys Leu Val Asn
                   325                    330                    335
Thr His Arg Asp Ser Ala Phe Ile Phe Leu Ser Gln Ser Leu Glu Tyr
                   340                    345                    350
Ala Lys Asn Ser Arg Ala Ser Leu Arg Lys Cys Ser Val Met Phe Ile
        355                    360                    365
Gly Ser Leu Val Pro Cys Met Glu Ser Ile Met Thr Glu Asp Arg Leu
        370                    375                    380
Asn Glu Val Lys Ala Ala Leu Asp Asn Leu Arg His Asp Pro Glu Ala
385                    390                    395                    400
Ser Val Cys Ile Tyr Ala Ala Gln Val Gln Asp His Ile Leu Ala Ser
                   405                    410                    415
Cys Trp Gln Asn Ser Trp Leu Pro His Gly Asn Ser Trp Val Cys Tyr
                   420                    425                    430
Ser Ala Thr Thr His Arg Trp Ser Pro Ser Cys Glu Asn Leu Pro Thr
        435                    440                    445
Ser His Gln Arg Arg Ser Trp Ile Met Gln Ala Leu Gly Ser Trp Lys
        450                    455                    460
Met Ser Leu Lys Lys
465


<210> 4943
<211> 1020
<212> DNA
<213> Homo sapiens

<400> 4943
nnacgcgtgg gtgaggaagg gcaggtctag gtaaggctgt cggtgacttt gggggtctgc
60
agcaaggggc gatggctgcg aagtctacgg gggtctccaa ccttgtagag tcgccaggaa
120
tagggcgaat ccacttcatt agtgaccagc tcggcggtt cacgtgcatc acacaaataa
180
cttggccttt ttctgcctca gttgggggat ttcttaaacg tagaataccc gcgtttccgc
240
tgccgtaatt tcctctcagg cgcaattact ctcttccata ttggttaaca gtagaaggct
300
cagtttctct gctcatcaca cggccttcgg cactgtagct ttgggtggtg ggctgcagat
360
taattttgta accaccttaa gaaaaatacg gaactctaac tccttgccac tcaagaaatg
420
```

```
tcctcccttt cagaatatgc cttccgcatg tctcgtctca gtgcccggct atttggtgaa
480
gtcaccaggc ctactaattc caagtctatg aaagtggtga aactgtttag tgaactgccc
540
ttggccaaga agaaggagac ttatgattgg tatccaaatc accacactta cgctgaactc
600
atgcagacgc tccgatttct ggactctac agagatgagc atcaggattt tatggatgag
660
caaaaacgac taaagaagct tcgtggaaag gagaaaccaa agaaaggaga agggaaaaga
720
gcagcaaaaa ggaaatagtg ttggtccctc aagagggaga ctttcttcct cagtggcgga
780
gagaagaaag tgcatttatt gtctttccac atattggagg aatgtcatct tcctaaatga
840
agtttatttg gaggaacaca gtcatctcct tggtgaaatc taatccggtt acattgtggc
900
tggtttcttg aacacattct aactgtgcaa aattatcttg ccttggccg tgtaatgtga
960
ggtttacctg attctctaat gaaataaata cctaagttat aaaaaaaaaa aaaaaaaaaa
1020
```

<210> 4944
<211> 106
<212> PRT
<213> Homo sapiens

<400> 4944

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Met Ser Ser Leu Ser Glu Tyr Ala Phe Arg Met Ser Arg Leu Ser Ala
1               5                   10                  15
Arg Leu Phe Gly Glu Val Thr Arg Pro Thr Asn Ser Lys Ser Met Lys
            20                  25                  30
Val Val Lys Leu Phe Ser Glu Leu Pro Leu Ala Lys Lys Lys Glu Thr
            35                  40                  45
Tyr Asp Trp Tyr Pro Asn His His Thr Tyr Ala Glu Leu Met Gln Thr
        50                  55                  60
Leu Arg Phe Leu Gly Leu Tyr Arg Asp Glu His Gln Asp Phe Met Asp
65                  70                  75                  80
Glu Gln Lys Arg Leu Lys Lys Leu Arg Gly Lys Glu Lys Pro Lys Lys
                85                  90                  95
Gly Glu Gly Lys Arg Ala Ala Lys Arg Lys
                100                 105
```

<210> 4945
<211> 1792
<212> DNA
<213> Homo sapiens

<400> 4945

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actagtaaca atgccccacc tctaaatcta gaggacaagc tacagagggg tttgaagggg
60
aagcaggaat tctggcaaca gtgtgtctca ttcattcctc caggccagga gtaccgcatg
120
tacaacacat atgatgtcca cttttatgct tcctttgccc tcatcatgct ctggcccaaa
180
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cttgagctca gcctacagta tgacatggct ctggccactc tcagggagga cctgacacgg
240

cgacggtacc tgatgagtgg ggtgatggca cctgtgaaaa ggaggaacgt catcccccat
300

gatattgggg acccagatga tgaaccatgg ctccgcgtca atgcatattt aatccatgat
360

actgctgatt ggaaggacct gaacctgaag tttgtgctgc aggtttatcg ggactattac
420

ctcacgggtg atcaaaactt cctgaaggac atgtggcctg tgtgtctagt aagggatgca
480

catgcagtgg ccagtgtgcc aggggtatgg ttggtgtctg gaagagcct agctggttgt
540

tgcctttcct cggtacctag gtcttcaaca tcttggtccc tctctaggct gtgatggaat
600

ctgaaatgaa gtttgacaag gaccatgatg gactcattga aaatggaggc tatgcagacc
660

agacctatga tggatgggtg accacaggcc ccaggttagc gggtaggggt ttccaggagg
720

cctgaggtga gaaactgggc aacaagggat tgtagggctc aagaaagaat gactcattgt
780

ctattacacg gcatgggagc agctggagct gccagtctga cccccaaacc catgtccctg
840

atcagtgctt actgtggagg gctgtggctg gcagctgtgg ctgtgatggt ccagatggct
900

gctctgtgtg gggcacagga catccaggat aagtttctt ctatcctcag ccggggccaa
960

gaagcctatg agagactgct gtggaatggt gagttcgggg agcctaagta gtcttaaggc
1020

agctgagagg acaccaggag ccttattttt ctcttcctcg actccaggcc gctattacaa
1080

ctatgacagc agctctcggc ctcagtctcg tagtgttatg tctgaccagt gtgctggaca
1140

gtggttcctg aaggcctgtg gcctaggaga aggagacact gaggtgtttc ctacccaaca
1200

tgtggtccgt gctctccaaa ctatctttga gctgaacgtc caggcctttg caggaggggc
1260

catgggggct gtgaatggga tgcagcccca tggtgtccct gataaatcca gtgtgcagtc
1320

tgatgaagtc tgggtgggtg tggtctacgg gctggcagct accatgatcc aagaggtaat
1380

gcactccttt tcccatctct ccaccatctg tatcctggcc cagaaaactt cctcaaccac
1440

caaatttctt caaggcataa cccaatgcca tcttgtccgt ctataaagcc tcccattttt
1500

ccctggtatg cattccagct cctgccttca ggcttctgtc tgtgggtcat agttatctcc
1560

tccacttgct gggagctcct tgaaggcaaa gactctactg cctccatcta tccagtggaa
1620

gtggctcttc agagggtgcc aagttagtat gtatgactgt catctctccc aacagggcct
1680

gacttgggag ggcttccaga cagctgaagg ctgctaccgt accgtgtggg agcgcctggg
1740

tctggccttc cagacccccag aggcatactg ccagcagcga gtgttccgcg cg
1792

<210> 4946
<211> 197
<212> PRT
<213> Homo sapiens

<400> 4946
Thr Ser Asn Asn Ala Pro Pro Leu Asn Leu Glu Asp Lys Leu Gln Arg
  1   5   10   15
Gly Leu Lys Gly Lys Gln Glu Phe Trp Gln Gln Cys Val Ser Phe Ile
             20   25   30
Pro Pro Gly Gln Glu Tyr Arg Met Tyr Asn Thr Tyr Asp Val His Phe
         35   40   45
Tyr Ala Ser Phe Ala Leu Ile Met Leu Trp Pro Lys Leu Glu Leu Ser
     50   55   60
Leu Gln Tyr Asp Met Ala Leu Ala Thr Leu Arg Glu Asp Leu Thr Arg
65   70   75   80
Arg Arg Tyr Leu Met Ser Gly Val Met Ala Pro Val Lys Arg Arg Asn
                85   90   95
Val Ile Pro His Asp Ile Gly Asp Pro Asp Asp Glu Pro Trp Leu Arg
             100   105   110
Val Asn Ala Tyr Leu Ile His Asp Thr Ala Asp Trp Lys Asp Leu Asn
         115   120   125
Leu Lys Phe Val Leu Gln Val Tyr Arg Asp Tyr Tyr Leu Thr Gly Asp
     130   135   140
Gln Asn Phe Leu Lys Asp Met Trp Pro Val Cys Leu Val Arg Asp Ala
145   150   155   160
His Ala Val Ala Ser Val Pro Gly Val Trp Leu Val Ser Gly Lys Ser
             165   170   175
Leu Ala Gly Cys Cys Leu Ser Ser Val Pro Arg Ser Ser Thr Ser Trp
             180   185   190
Ser Leu Ser Arg Leu
         195

<210> 4947
<211> 2060
<212> DNA
<213> Homo sapiens

<400> 4947
nagtactgga tcccatcctg ggtggggttc tcctagtggt ctgagtgtgc caccaggtct
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gcagggagga ggaatccatg caggaggtta gaagagtcag aagattttat tggctgtctt
120
cacttgaata acagccctgt ggcattttag atctcgagca ctgggatttg tcaattgtca
180
atgtgatgct tggggactgg catattcgtt gcaagggggtt ttttcacctt ttctgaagct
240
tccttttttcc tctgttttaa agcatatcac agtatgggcc attctctgag tgaagaaagt
300
acagagtgaa agtacacccg aagtgagagg gactcagaca tcttgtgtcc tttgctcagc
360
tggaagacta ctaagcacgt agtttcagtc attcagttga tagacatttg aacacttatg
420

                                4117

gtggtgccta accccaggcc gagtgtgact cattccacct tgcagttaaa gcagtggaag
480
tgcacgtatg aggccctcaa ctgccttcct gattcagcat agtgttttct tctgggctgc
540
ttcactaaga gaaaacctta cagccaatcc aggacctctc tgatcacctc cccagtggat
600
gtagcattgg taaagtggaa ggaccttgtt ctgtttgtca gtaggagctg atgtgtgtga
660
acggactcct atctctgctt cttcctttgt gtgacagact ggggtatctt tgcccatcct
720
tgcttagacc agtctagacc ctctggccct ctgcattccc agttccaaat gctagggatg
780
gagaatgtgc ttgggcttgc ataagacggg gctatgcccc tggctctcct cagctgtagt
840
cagcattgct agctgcccac aactcacgcc agtgggtgaa gatgctggtc tcagagaacc
900
agagcttggc aggccccctc atacacctct tggagaggta gatgctggtc aactatgcac
960
cattacctgt gagcagagct tactcctctg ccattctctc tccaggccct cagcatcctc
1020
atgctccctc acaacatccc gtccagcctg agcctgctca ccagcatggt ggatgacatg
1080
tggcattacg ctggggacca gtccactgat tttaactggt cacccgccg agccatgctg
1140
gctgccatct acaacacaac agagctggtg atgatgcagg actcctctcc agactttgag
1200
gacacttggc gcttcctgga aaaccgggtt aatgatgcaa tgaacatggg ccacactgcc
1260
aagcaggtaa agtccacagg agaggcactg gtgcaaggac tcatgggtgc agcagtgacg
1320
ctcaagaact tgacangtct aaaccagcgt cggtgagagg aaggggtata agctacaatg
1380
cctagaagag aatgagcgga cagattgaaa gagctttgaa aagtataagg tgccatccac
1440
ataacctggt gttcacgaga acacactaaa ggactcctga gtcactacca cagccacctg
1500
gaaaccacaa ggcatttgat gctaccgttc tggtcaggga ttgggctgct tcttcagttc
1560
ctaataccag accaagcctc ctgatgcctt tctgcactgc aactgtgtga ttgaaaaatg
1620
agatgttcat ccaagcagtc aagccacaga aacccagcat gtccctgtca caatctcatg
1680
ggcaccttga tcatgtctta accttccctt aaccttgggg ctcccaagcc agagtcaagg
1740
tctgacgcca cctcaaggtg acagctcatc tccagcacag cacaggcgtg tgcacacaga
1800
ggtgttcctt gcagcccccт ccctctcagg tytcctgaga tgctgctcct gggagccccc
1860
tcagaaaact gcctcacctg agacaagtgc ctgctggaca gaggtgtgat tccaggcctg
1920
gtgtcacatg acaccagcat gcattgcagg attattagtg tattttgagt ctgtaaaaat
1980
aataaatatg tttgaagtag ttaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2040

aaaaaaaaaa aaaaaaaaaa
2060

<210> 4948
<211> 127
<212> PRT
<213> Homo sapiens

<400> 4948
Ala Glu Leu Thr Pro Leu Pro Phe Ser Leu Gln Ala Leu Ser Ile Leu
  1   5   10   15
Met Leu Pro His Asn Ile Pro Ser Ser Leu Ser Leu Leu Thr Ser Met
             20   25   30
Val Asp Asp Met Trp His Tyr Ala Gly Asp Gln Ser Thr Asp Phe Asn
         35   40   45
Trp Tyr Thr Arg Arg Ala Met Leu Ala Ala Ile Tyr Asn Thr Thr Glu
     50   55   60
Leu Val Met Met Gln Asp Ser Ser Pro Asp Phe Glu Asp Thr Trp Arg
65   70   75   80
Phe Leu Glu Asn Arg Val Asn Asp Ala Met Asn Met Gly His Thr Ala
                 85   90   95
Lys Gln Val Lys Ser Thr Gly Glu Ala Leu Val Gln Gly Leu Met Gly
             100   105   110
Ala Ala Val Thr Leu Lys Asn Leu Thr Xaa Leu Asn Gln Arg Arg
         115   120   125

<210> 4949
<211> 1259
<212> DNA
<213> Homo sapiens

<400> 4949
nngccggcct gtcccccagg ctacttgacg gcgccctgcc accggtgccg ggggctggtg
60
gacaagttta accaggggat ggtggacacc gcaaagaaga actttggcgg cgggaacacg
120
gcttgggagg aaaagacgct gtccaagtac gagtccagcg agattcgcct gctggagatc
180
ctggaggggc tgtgcgagag cagcgacttc gaatgcaatc agatgctaga ggcgcaggag
240
gagcacctgg aggcctggtg gctgcagctg aagagcgaat atcctgactt attcgagtgg
300
ttttgtgtga agacactgaa agtgtgctgc tctccaggaa cctacggtcc cgactgtctc
360
gcatgccagg gcggatccca gaggccctgc agcgggaatg gccactgcag cggagatggg
420
agcagacagg gcgacgggtc ctgccggtgc acatggggt accagggccc gctgtgcact
480
gactgcatgg acggctactt cagctcgctc cggaacgaga cccacagcat ctgcacagcc
540
tgtgacgagt cctgcaagac gtgctcgggc ctgaccaaca gagactgcgg cgagtgtgaa
600
gtgggctggg tgctggacga gggcgcctgt gtggatgtgg acgagtgtgc ggccgagccg
660

cctccctgca gcgctgcgca gttctgtaag aacgccaacg gctcctacac gtgcgaagag
720

tgtgactcca gctgtgtggg ctgcacaggg gaaggcccag gaaactgtaa agagtgtatc
780

tctggctacg cgagggagca cggacagtgt gcagatgtgg acgagtgctc actagcagaa
840

aaaacctgtg tgaggaaaaa cgaaaactgc tacaatactc cagggagcta cgtctgtgtg
900

tgtcctgacg gcttcgaaga aacggaaga tgcctgtgtg ccgccggcag aggctgaagc
960

cacagaagga gaaagcccga cacagctgcc ctcccgcgaa gacctgtaat gtgccggact
1020

tacccttaaa attattcaga aggatgtccc gtggaaaatg tggccctgag gatgccgtct
1080

cctgcagtgg acagcggcgg ggagaggctg cctgctctct aacggttgat tctcatttgt
1140

cccttaaaca gctgcatttc ttggttgttc ttaaacagac ttgtatattt tgatacagtt
1200

ctttgtaata aaattgacca ttgtaggtaa tcaggaggaa aaaaaaaaa aaaaaaaa
1259

<210> 4950
<211> 318
<212> PRT
<213> Homo sapiens

<400> 4950
Xaa Pro Ala Cys Pro Pro Gly Tyr Leu Thr Ala Pro Cys His Arg Cys
 1   5   10   15
Arg Gly Leu Val Asp Lys Phe Asn Gln Gly Met Val Asp Thr Ala Lys
            20   25   30
Lys Asn Phe Gly Gly Gly Asn Thr Ala Trp Glu Glu Lys Thr Leu Ser
            35   40   45
Lys Tyr Glu Ser Ser Glu Ile Arg Leu Leu Glu Ile Leu Glu Gly Leu
        50   55   60
Cys Glu Ser Ser Asp Phe Glu Cys Asn Gln Met Leu Glu Ala Gln Glu
65   70   75   80
Glu His Leu Glu Ala Trp Trp Leu Gln Leu Lys Ser Glu Tyr Pro Asp
                85   90   95
Leu Phe Glu Trp Phe Cys Val Lys Thr Leu Lys Val Cys Cys Ser Pro
            100   105   110
Gly Thr Tyr Gly Pro Asp Cys Leu Ala Cys Gln Gly Gly Ser Gln Arg
            115   120   125
Pro Cys Ser Gly Asn Gly His Cys Ser Gly Asp Gly Ser Arg Gln Gly
        130   135   140
Asp Gly Ser Cys Arg Cys His Met Gly Tyr Gln Gly Pro Leu Cys Thr
145   150   155   160
Asp Cys Met Asp Gly Tyr Phe Ser Ser Leu Arg Asn Glu Thr His Ser
                165   170   175
Ile Cys Thr Ala Cys Asp Glu Ser Cys Lys Thr Cys Ser Gly Leu Thr
            180   185   190
Asn Arg Asp Cys Gly Glu Cys Glu Val Gly Trp Val Leu Asp Glu Gly
        195   200   205
Ala Cys Val Asp Val Asp Glu Cys Ala Ala Glu Pro Pro Pro Cys Ser

4120

```
        210                    215                    220
Ala Ala Gln Phe Cys Lys Asn Ala Asn Gly Ser Tyr Thr Cys Glu Glu
225                    230                    235                    240
Cys Asp Ser Ser Cys Val Gly Cys Thr Gly Glu Gly Pro Gly Asn Cys
                245                    250                    255
Lys Glu Cys Ile Ser Gly Tyr Ala Arg Glu His Gly Gln Cys Ala Asp
            260                    265                    270
Val Asp Glu Cys Ser Leu Ala Glu Lys Thr Cys Val Arg Lys Asn Glu
        275                    280                    285
Asn Cys Tyr Asn Thr Pro Gly Ser Tyr Val Cys Val Cys Pro Asp Gly
      290                    295                    300
Phe Glu Glu Xaa Gly Arg Cys Leu Cys Ala Ala Gly Arg Gly
305                    310                    315
```

<210> 4951
<211> 1835
<212> DNA
<213> Homo sapiens

<400> 4951
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ngagctctgg cgctcagctg gcccccacca ctctcacctg ccgcctgggc tcgctcccgg
60
cttctctcca gccgtcgact ccacgcctcg cgcctctcgc gagaggagga ggctccacgg
120
agcgacgact tccgccctcc ttagggccgt ggtcccgtag ctaccggtcg cgtcgccgtg
180
ggcgacgtgc ccgcttccaa aatggcggcg gcggcggtat ctggtgcgct tggccgggcg
240
ggctggaggc tcctgcagct gcgatgcctg cccgtggccc gttgccgaca agccctggtg
300
ccgcgtgcct tccatgcttc agctgtgggg ctaaggtctt cagatgagca gaagcagcag
360
cctcccaact cattttctca gcagcattct gagacacagg gggcagaaaa acctgatcca
420
gagtcttctc attcacccccc caggtataca gaccagggcg gcgaggagga ggaggactat
480
gaaagtgagg agcagttgca gcaccgcatc ctgacggcag cccttgagtt tgtgcccgcc
540
cacgggtgga cagcagaggc gattgcagaa ggagcccagt ctctgggtct ctccagtgca
600
gcagccagca tgtttggaag gatgggcagt gagctaatac tgcattttgt gacccagtgc
660
aatacccggc tcacacgtgt gctagaagag gagcagaagc tggtacagtt gggccaggcg
720
gagaagagga agacagacca gttcctgagg gatgcagtgg aaaccagact gagaatgctg
780
atcccataca ttgagcactg gccccgggcc ctcagcatcc tcatgctccc tcacaacatc
840
ccgtccagcc tgagcctgct caccagcatg gtggatgaca tgtggcatta cgctggggac
900
cagtccactg attttaactg gtacacccgc cgagccatgc tggctgccat ctacaacaca
960
acagagctgg tgatgatgca ggactcctct ccagactttg aggacacttg gcgcttcctg
1020
```

gaaaaccggg ttaatgatgc aatgaacatg ggccacactg ccaagcaggt aaagtccaca
1080
ggagaggcac tggtgcaagg actcatgggt gcagcagtga cgctcaagaa cttgacaggt
1140
ctaaaccagc gtcggtgaga ggaaggggta taagctacaa tgcctagaag agaatgagcg
1200
gacagattga aagagctttg aaaagtataa ggtgccatcc acataacctg gtgttcacga
1260
gaacacacta aaggactcct gagtcactac cacagccacc tggaaaccac aaggcatttg
1320
atgctaccgt tctggtcagg gattgggctg cttcttcagt tcctaatacc agaccaagcc
1380
tcctgatgcc tttctgcact gcaactgtgt gattgaaaaa tgagatgttc atccaagcag
1440
tcaagccaca gaaacccagc atgtccctgt cacaatctca tgggcacctt gatcatgtct
1500
taaccttccc ttaaccttgg ggctcccaag ccagagtcaa ggtctgacgc cacctcaagg
1560
tgacagctca tctccagcac agcacaggcg tgtgcacaca gaggtgttcc ttgcagcccc
1620
ctccctctca ggtgtcctga gatgctgctc ctgggagccc cctcagaaaa ctgcctcacc
1680
tgagacaagt gcctgctgga cagaggtgtg attccaggcc tggtgtcaca tgacaccagc
1740
atgcattgca ggattattag tgtattttga gtctgtaaaa ataataaata tgtttgaagt
1800
agttaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa
1835

<210> 4952
<211> 318
<212> PRT
<213> Homo sapiens

<400> 4952
Met Ala Ala Ala Ala Val Ser Gly Ala Leu Gly Arg Ala Gly Trp Arg
1   5   10   15
Leu Leu Gln Leu Arg Cys Leu Pro Val Ala Arg Cys Arg Gln Ala Leu
            20   25   30
Val Pro Arg Ala Phe His Ala Ser Ala Val Gly Leu Arg Ser Ser Asp
            35   40   45
Glu Gln Lys Gln Gln Pro Pro Asn Ser Phe Ser Gln Gln His Ser Glu
        50   55   60
Thr Gln Gly Ala Glu Lys Pro Asp Pro Glu Ser Ser His Ser Pro Pro
65   70   75   80
Arg Tyr Thr Asp Gln Gly Gly Glu Glu Glu Glu Asp Tyr Glu Ser Glu
                85   90   95
Glu Gln Leu Gln His Arg Ile Leu Thr Ala Ala Leu Glu Phe Val Pro
            100   105   110
Ala His Gly Trp Thr Ala Glu Ala Ile Ala Glu Gly Ala Gln Ser Leu
            115   120   125
Gly Leu Ser Ser Ala Ala Ala Ser Met Phe Gly Arg Met Gly Ser Glu
        130   135   140
Leu Ile Leu His Phe Val Thr Gln Cys Asn Thr Arg Leu Thr Arg Val

4122

```
145                 150                    155                    160
Leu Glu Glu Glu Gln Lys Leu Val Gln Leu Gly Gln Ala Glu Lys Arg
            165               170               175
Lys Thr Asp Gln Phe Leu Arg Asp Ala Val Glu Thr Arg Leu Arg Met
            180               185               190
Leu Ile Pro Tyr Ile Glu His Trp Pro Arg Ala Leu Ser Ile Leu Met
            195               200               205
Leu Pro His Asn Ile Pro Ser Ser Leu Ser Leu Leu Thr Ser Met Val
        210               215               220
Asp Asp Met Trp His Tyr Ala Gly Asp Gln Ser Thr Asp Phe Asn Trp
225               230               235               240
Tyr Thr Arg Arg Ala Met Leu Ala Ala Ile Tyr Asn Thr Thr Glu Leu
            245               250               255
Val Met Met Gln Asp Ser Ser Pro Asp Phe Glu Asp Thr Trp Arg Phe
            260               265               270
Leu Glu Asn Arg Val Asn Asp Ala Met Asn Met Gly His Thr Ala Lys
            275               280               285
Gln Val Lys Ser Thr Gly Glu Ala Leu Val Gln Gly Leu Met Gly Ala
        290               295               300
Ala Val Thr Leu Lys Asn Leu Thr Gly Leu Asn Gln Arg Arg
305               310               315
```

<210> 4953
<211> 355
<212> DNA
<213> Homo sapiens

<400> 4953
gtgcacgcag gaaatggcgg gtgggaggca ggacaggaga gcccaggcct ggacaccact
60
gtcagcctgg ggatgcttgg cggcttctcc agtcctggga gcaggcatca cctggccgcg
120
ggtgccccct ggtggcagct tgaaggaagg acgggcagtg ggtcgcagcc agcggggacc
180
taccccgcaa aacgcacata aaagctggaa tcagcttgtt acagctgcag gtccctctcg
240
tccgatttgg atagaccctc ttgggaccca ctgcaccagg aaccccaaa tgcagctcag
300
cagcatggga ggagccctgt ctgctggggg tgtctggat cgtcggagag aggct
355

<210> 4954
<211> 114
<212> PRT
<213> Homo sapiens

<400> 4954
```
Met Ala Gly Gly Arg Gln Asp Arg Arg Ala Gln Ala Trp Thr Pro Leu
1               5                    10                    15
Ser Ala Trp Gly Cys Leu Ala Ala Ser Pro Val Leu Gly Ala Gly Ile
            20               25               30
Thr Trp Pro Arg Val Pro Pro Gly Gly Ser Leu Lys Glu Gly Arg Ala
            35               40               45
Val Gly Arg Ser Gln Arg Gly Pro Thr Pro Gln Asn Ala His Lys Ser
```

```
        50                    55                    60
Trp Asn Gln Leu Val Thr Ala Ala Gly Pro Ser Arg Pro Ile Trp Ile
65                    70                    75                    80
Asp Pro Leu Gly Thr His Cys Thr Arg Glu Pro Gln Met Gln Leu Ser
                85                    90                    95
Ser Met Gly Gly Ala Leu Ser Ala Gly Gly Val Trp Asp Arg Arg Arg
                100                   105                   110
Glu Ala
```

```
<210> 4955
<211> 364
<212> DNA
<213> Homo sapiens
```

```
<400> 4955
agatctaagg ccctcgggag agatgggaac tgagcacctg ggtcttagac cggaggagca
60
aactgcaaga cagggtggcc ggggacacca gcctccgccc ttctgtgaca taaggacaag
120
agctcagcct gcccaggaac aactctgggc aagagatgtg gaaagaaaga gctcangggg
180
gggcacgcat ggcatcctgg ggggacatct gagggcaccc ccacccacta ttcctccctc
240
caaggtggcc tctgagtgtg aaggcagggg gaagcagaca cctgcccctc actctccctc
300
cctaccacat agctaccggg tggggggcgt ccctgggatg attcctgagg gcaggatcca
360
gggg
364
```

```
<210> 4956
<211> 114
<212> PRT
<213> Homo sapiens
```

```
<400> 4956
Met Gly Thr Glu His Leu Gly Leu Arg Pro Glu Glu Gln Thr Ala Arg
1               5                     10                    15
Gln Gly Gly Arg Gly His Gln Pro Pro Phe Cys Asp Ile Arg Thr
                20                    25                    30
Arg Ala Gln Pro Ala Gln Glu Gln Leu Trp Ala Arg Asp Val Glu Arg
            35                    40                    45
Lys Ser Ser Xaa Gly Gly Thr His Gly Ile Leu Gly Gly His Leu Arg
        50                    55                    60
Ala Pro Pro Thr Ile Pro Pro Ser Lys Val Ala Ser Glu Cys Glu
65                    70                    75                    80
Gly Arg Gly Lys Gln Thr Pro Ala Pro His Ser Pro Ser Leu Pro His
                85                    90                    95
Ser Tyr Arg Val Gly Gly Val Pro Gly Met Ile Pro Glu Gly Arg Ile
                100                   105                   110
Gln Gly
```

```
<210> 4957
<211> 872
<212> DNA
<213> Homo sapiens

<400> 4957
nttcatattt tttttttttt ttggacacaa catgatatta ggctttattt gaatttaaaa
60
tcttgattcc atccagggac atttttttacc gaagcgtctc agagactggc tcagggtatt
120
tcttgacaag actgtacagg gcttctcatc atacacaaac cctccacagc ccacggctcc
180
aacccacagc acctcctgca gtcctggagg gaaaagggac agtaacatga agtgtctgaa
240
gatccatttc acctcttttc catgtgaatc atgacgcttt caatgcattt cttgacagga
300
ttctattttg aaagaatgat gctcaatctg tacctttat gcttcttgtt tcttctccat
360
caataatatg tcagtcaact gcttgtcaga gacacttagc tgctgacagg tcctcataac
420
ctgactcagg taaactgcca agagatgctt gcacaggatg ctgtcactct tccgtagcac
480
tgagaatgca aatgcaggac atgaacagta atgacaagaa gccaaacatg tgtatgtttt
540
actggaactt ccaaggacct ggtaaacacg ccttccactg ggtgatgaga ttaaggtgat
600
ggactgtcga tcaactaggt ccaaggcctg ggtggctgat gagccaaaga gaaacttcag
660
cgataacaga tattcatcag gaattcggtc ccgtacttcg cgcgctctcc tgcaccgccg
720
ccgccatctc gctcaggagc tcctccacaa ccgccggcaa ctacggccat cgcgccgcag
780
gacacgccct ccacgacgcg gaccgcgcga cgctccagct gactgcgcct acctgtggag
840
gatcctgacc ccccgccggc ctcgttccga at
872


<210> 4958
<211> 51
<212> PRT
<213> Homo sapiens

<400> 4958
Gln Ile Phe Ile Arg Asn Ser Val Pro Tyr Phe Ala Arg Ser Pro Ala
 1               5                  10                  15
Pro Pro Pro Pro Ser Arg Ser Gly Ala Pro Pro Gln Pro Pro Ala Thr
            20                  25                  30
Thr Ala Ile Ala Pro Gln Asp Thr Pro Ser Thr Thr Arg Thr Ala Arg
        35                  40                  45
Arg Ser Ser
    50


<210> 4959
<211> 449
```

<212> DNA
<213> Homo sapiens

<400> 4959
acgcgtgtca aggctgggaa tgcaaatggt agtggtggtt tcctttgctg ggggttgatg
60
cagtggttgg gggggcttcc atttgcagtt gagggccagg tgtttgggtc cttccatgtg
120
gcagggataa agaggagagc tggcatctgg agtcatgatc tgtctgagag gcagtgcctc
180
cggccaccgt aggatggagg ccagcttcca gccctggctg atgggggaga agcagcgaat
240
tctccagatg tggtatggca gacctttgga agattcactc ggcctccact taaccttgtg
300
agaccaaagg ccacagcccc atgtgttctg cgtgctgttg aacatgtttg tatttcattg
360
gcgtggatga taatttggtt gaaaggagag atggtcacca gtggactcag tttaggaagg
420
cacaaaggtc aacccttttcc gtttctaga
449

<210> 4960
<211> 115
<212> PRT
<213> Homo sapiens

<400> 4960
Met Phe Asn Ser Thr Gln Asn Thr Trp Gly Cys Gly Leu Trp Ser His
1   5   10   15
Lys Val Lys Trp Arg Pro Ser Glu Ser Ser Lys Gly Leu Pro Tyr His
            20   25   30
Ile Trp Arg Ile Arg Cys Phe Ser Pro Ile Ser Gln Gly Trp Lys Leu
        35   40   45
Ala Ser Ile Leu Arg Trp Pro Glu Ala Leu Pro Leu Arg Gln Ile Met
    50   55   60
Thr Pro Asp Ala Ser Ser Pro Leu Tyr Pro Cys His Met Glu Gly Pro
65   70   75   80
Lys His Leu Ala Leu Asn Cys Lys Trp Lys Pro Pro Gln Pro Leu His
                85   90   95
Gln Pro Pro Ala Lys Glu Thr Thr Thr Thr Ile Cys Ile Pro Ser Leu
            100   105   110
Asp Thr Arg
        115

<210> 4961
<211> 4737
<212> DNA
<213> Homo sapiens

<400> 4961
gcggccgcca cacccagcac cacaggcacc aagtccaaca cgcccacatc ctccgtgccc
60
tcggccgccg tcacacccct caacgagagc ctgcagcccc tggggggacta tggcgtgggc
120

4126

```
tccaagaaca gcaagcgtgc ccgggagaag cgcgacagcc gcaacatgga agtacaggtc
180
acccaggaga tgcgcaacgt cagtataggc atgggcagca gtgacgagtg gtctgatgtt
240
caagacatta ttgactccac gccagagctg gacatgtgtc cagagacccg cctggaccgc
300
acaggaagca gcccaaccca gggcatcgtg aacaaagctt tcggcatcaa caccgactcc
360
ctgtaccatg agctgtcgac ggcagggtct gaggtcatcg gggatgtgga cgaaggggcc
420
gacctcctag gggagttctc aggaatgggc aaagaagtgg ggaatctgct actggaaaac
480
tcacagcttc tggaaaccaa aaacgccttg aatgtggtga agaatgacct gattgccaag
540
gtcgaccagc tgtccgggga gcaggaggtg ctgaggggcg agttggaggc tgctaagcag
600
gccaaagtca agctggaaaa ccgtatcaag gagctggaag aggaactgaa aagagtgaag
660
tccgaggcca tcatcgcccg ccgtgaaccc aaagaagagg cggaggatgt aagcagctat
720
ctctgtacag aatcggacaa aatccccatg gcccagcgcc gccgcttcac gcgggtggag
780
atggcccgtg tgctcatgga gcggaaccag tacaaggagc ggctgatgga gctgcaggag
840
gctgtgcggt ggactgagat gatcagagcg tcccgagagc acccatccgt ccaggagaag
900
aagaagtcga ccatctggca gttcttcagc cgcctcttca gctcttcctc cagcccccct
960
ccggccaagc gccctatcc ctcggtgaac atccactaca agtcacccac cactgccggc
1020
ttcagccagc gccgcaacca tgccatgtgc ccgatctcgg caggcagccg gcccctggaa
1080
ttcttccctg acgacgactg cacgtcctcc gcccgtcgag agcagaagcg cgagcagtac
1140
cgccaggtgc gtgagcacgt gcgtaacgac gacggccgtc tgcaggcctg cggctggagc
1200
ctgcccgcca agtacaagca gctgagtccc aacggggggcc aggaggacac gcggatgaag
1260
aacgtgccgg tgccggtgta ctgccgccct ctggtggaga aggaccccac catgaagctg
1320
tggtgtgccg cgggcgtcaa cctgagcggg tggaggccca atgaggacga cgctgggaat
1380
ggagtcaagc cagcgccagg ccgcgatccc ctgacctgcg accgcgaagg agacggcgag
1440
cccaagagcg cccacgcgtc tcccgagaag aagaaggcca aggagctccc tgaaatggac
1500
gccacctcca gccgggtgtg gatcctgacc agcaccctga ccaccagcaa ggtggtgatc
1560
atcgacgcca accagccggg cacggtggtg gaccagttca ccgtctgcaa cgcgcacgtg
1620
ctgtgcatct ccagcatccc cgcggccagc gacagcgact accctcccgg ggagatgttc
1680
ctggacagcg acgtgaaccc agaggacccg ggcgcagatg gcgtgctggc cggtatcacc
1740
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4127

```
ctggtgggct gtgccacccg ctgcaacgtg ccgcggagca actgctcctc ccgaggggac
1800
accccagtgc tagacaaggg gcaggggggag gtggccacca tcgccaacgg gaaggtcaac
1860
ccgtcccagt ccacagagga ggccacagag gccacggagg tgccagaccc tgggcccagc
1920
gagccagaga cagccacatt gcggcccggg cctctcacag agcacgtctt cactgaccca
1980
gccccgaccc cgtcctctgg cccccagcct ggcagcgaga acgggccaga gcctgacagc
2040
agcagcacac ggccagagcc agagcccagc ggggacccca cgggagcagg cagcagtgct
2100
gcacccacca tgtggctggg agcccagaac ggctggctct atgtgcactc ggctgtggcc
2160
aactggaaga agtgcctgca ctccatcaag ctgaaggatt ctgtgctgag cctggtgcat
2220
gtcaaaggcc gtgtgctggt ggctctggcg gacgggaccc tggccatctt ccaccgtggt
2280
gaagatggcc agtgggatct gagcaactat cacctaatgg acctgggcca cccgcaccac
2340
tccatccgct gcatggctgt tgtgtacgac cgcgtgtggt gtggctacaa gaacaaggtg
2400
cacgtcatcc agcccaagac catgcagata gagaagtcat ttgacgccca cccgcggcgg
2460
gagagccagg tgcggcagct ggcgtggatc ggcgatggcg tatgggtgtc catccgcctg
2520
gactccaccc tgaggctcta ccatgcacac acgcaccagc atctacagga cgtggacatt
2580
gagccctacg tcagcaagat gctaggcact ggcaagctgg gtttctcctt cgtacgcatc
2640
acggccctgc ttgtcgcggg cagccggctc tgggtgggca ccggcaacgg agtggtcatc
2700
tccatccccc tgacagagac tgtggtcctg caccgaggcc agctcctggg gctccgagcc
2760
aataagacat cccccacctc tggggagggc gcccgtcccg ggggcatcat ccacgtgtat
2820
ggcgatgaca gcagtgacag ggcggccagc agcttcatcc cctactgctc catggcccag
2880
gcccagctat gcttccatgg gcaccgcgat gccgtgaagt tctttgtctc ggtgccaggg
2940
aacgtgctgg ccaccctgaa tggcagtgtg ctggacagcc cagccgaggg ccctgggcca
3000
gctgcccctg cctcggaggt cgagggccag aagctgcgga acgtgctggt gctgagcggc
3060
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3360
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3660

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4440

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4500

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4560

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4620

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4680

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4737

<210> 4962
<211> 1069
<212> PRT
<213> Homo sapiens

<400> 4962
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Pro Leu Gly Asp Tyr Gly Val Gly Ser Lys Asn Ser Lys Arg Ala Arg
        35              40                  45
Glu Lys Arg Asp Ser Arg Asn Met Glu Val Gln Val Thr Gln Glu Met
    50              55                  60
Arg Asn Val Ser Ile Gly Met Gly Ser Ser Asp Glu Trp Ser Asp Val
65                  70                  75                      80
Gln Asp Ile Ile Asp Ser Thr Pro Glu Leu Asp Met Cys Pro Glu Thr
                85                  90                  95
Arg Leu Asp Arg Thr Gly Ser Ser Pro Thr Gln Gly Ile Val Asn Lys
            100                 105                 110
Ala Phe Gly Ile Asn Thr Asp Ser Leu Tyr His Glu Leu Ser Thr Ala
        115                 120                 125
Gly Ser Glu Val Ile Gly Asp Val Asp Glu Gly Ala Asp Leu Leu Gly
        130                 135                 140
Glu Phe Ser Gly Met Gly Lys Glu Val Gly Asn Leu Leu Leu Glu Asn
145                 150                 155                     160
Ser Gln Leu Leu Glu Thr Lys Asn Ala Leu Asn Val Val Lys Asn Asp
                165                 170                 175
Leu Ile Ala Lys Val Asp Gln Leu Ser Gly Glu Gln Glu Val Leu Arg
            180                 185                 190
Gly Glu Leu Glu Ala Ala Lys Gln Ala Lys Val Lys Leu Glu Asn Arg
            195                 200                 205
Ile Lys Glu Leu Glu Glu Glu Leu Lys Arg Val Lys Ser Glu Ala Ile
    210                 215                 220
Ile Ala Arg Arg Glu Pro Lys Glu Glu Ala Glu Asp Val Ser Ser Tyr
225                 230                 235                     240
Leu Cys Thr Glu Ser Asp Lys Ile Pro Met Ala Gln Arg Arg Arg Phe
                245                 250                 255
Thr Arg Val Glu Met Ala Arg Val Leu Met Glu Arg Asn Gln Tyr Lys
            260                 265                 270
Glu Arg Leu Met Glu Leu Gln Glu Ala Val Arg Trp Thr Glu Met Ile
            275                 280                 285
Arg Ala Ser Arg Glu His Pro Ser Val Gln Glu Lys Lys Lys Ser Thr
    290                 295                 300
Ile Trp Gln Phe Phe Ser Arg Leu Phe Ser Ser Ser Ser Pro Pro
305                 310                 315                     320
Pro Ala Lys Arg Pro Tyr Pro Ser Val Asn Ile His Tyr Lys Ser Pro
            325                 330                 335
Thr Thr Ala Gly Phe Ser Gln Arg Arg Asn His Ala Met Cys Pro Ile
            340                 345                 350
Ser Ala Gly Ser Arg Pro Leu Glu Phe Phe Pro Asp Asp Asp Cys Thr
        355                 360                 365
Ser Ser Ala Arg Arg Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg
    370                 375                 380
Glu His Val Arg Asn Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser
385                 390                 395                     400
Leu Pro Ala Lys Tyr Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp
            405                 410                 415
Thr Arg Met Lys Asn Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val
            420                 425                 430
Glu Lys Asp Pro Thr Met Lys Leu Trp Cys Ala Ala Gly Val Asn Leu
```

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                 435                    440                   .445
      Ser Gly Trp Arg Pro Asn Glu Asp Asp Ala Gly Asn Gly Val Lys Pro
          450 ·                   455                   460
      Ala Pro Gly Arg Asp Pro Leu Thr Cys Asp Arg Glu Gly Asp Gly Glu
      465                     470                   475                   480
      Pro Lys Ser Ala His Ala Ser Pro Glu Lys Lys Lys Ala Lys Glu Leu
                         485                   490                   495
      Pro Glu Met Asp Ala Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr
                     500         ·    ·    505                   510
      Leu Thr Thr Ser Lys Val Val Ile Ile Asp Ala Asn Gln Pro Gly Thr
                     515              520                   525
      Val Val Asp Gln Phe Thr Val Cys Asn Ala His Val Leu Cys Ile Ser
          530    ·              535                   540
      Ser Ile Pro Ala Ala Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe
      545         .           550                   555                   560
      Leu Asp Ser Asp Val Asn Pro Glu Asp Pro Gly Ala Asp Gly Val Leu
                         565                   570                   575
      Ala Gly Ile Thr Leu Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg
                     580                   585                   590
      Ser Asn Cys Ser Ser Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln
                 595                   600                   605
      Gly Glu Val Ala Thr Ile Ala Asn Gly Lys Val Asn Pro Ser Gln Ser
          610                   615                   620
      Thr Glu Glu Ala Thr Glu Ala Thr Glu Val Pro Asp Pro Gly Pro Ser
      625                   630                   635                   640
      Glu Pro Glu Thr Ala Thr Leu Arg Pro Gly Pro Leu Thr Glu His Val
                         645                   650                   655
      Phe Thr Asp Pro Ala Pro Thr Pro Ser Ser Gly Pro Gln Pro Gly Ser
                     660                   665                   670
      Glu Asn Gly Pro Glu Pro Asp Ser Ser Ser Thr Arg Pro Glu Pro Glu
                 675              ·    680                   685
      Pro Ser Gly Asp Pro Thr Gly Ala Gly Ser Ser Ala Ala Pro Thr Met
          690         .           695                   700
      Trp Leu Gly Ala Gln Asn Gly Trp Leu Tyr Val His· Ser Ala Val Ala
      705                   710    .              715                   720
      Asn Trp Lys Lys Cys Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu
                     725                  ·730                   735
      Ser Leu Val His Val Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly
                     740                   745                   750
      Thr Leu Ala Ile Phe His Arg Gly Glu Asp Gly Gln Trp Asp Leu Ser
                     755    .              760                   765
      Asn Tyr His Leu Met Asp Leu Gly His Pro His His Ser Ile Arg Cys
          770    ·               775                   780
      Met Ala Val Val Tyr Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val
      785                   790                   .795                   800
      His Val Ile Gln Pro Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala
                         805                   810                   815
      His. Pro Arg Arg Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp
                     820                   825                   830
      Gly Val Trp Val Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His
                 835                   840                   845
      Ala His Thr His Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val
          ·850                   855                   860
      Ser Lys Met Leu Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile
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865                 870                 875                 880
Thr Ala Leu Leu Val Ala Gly Ser Arg Leu Trp Val Gly Thr Gly Asn
                885                 890                 895
Gly Val Val Ile Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg
            900                 905                 910
Gly Gln Leu Leu Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly
        915                 920                 925
Glu Gly Ala Arg Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser
        930                 935                 940
Ser Asp Arg Ala Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln
945                 950                 955                 960
Ala Gln Leu Cys Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val
                965                 970                 975
Ser Val Pro Gly Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp
                980                 985                 990
Ser Pro Ala Glu Gly Pro Gly Pro Ala Ala Pro Ala Ser Glu Val Glu
        995                 1000                1005
Gly Gln Lys Leu Arg Asn Val Leu Val Leu Ser Gly Gly Glu Gly Tyr
        1010                1015                1020
Ile Asp Phe Arg Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Gly
1025                1030                1035                1040
Ala Gly Asp Met Ser Gln Val Lys Pro Val Leu Ser Lys Ala Glu Arg
                1045                1050                1055
Ser His Ile Ile Val Trp Gln Val Ser Tyr Thr Pro Glu
            1060                1065
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<210> 4963
<211> 1575
<212> DNA
<213> Homo sapiens

<400> 4963

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120
aagtgccacc cggtccactt cctgaactca cgggccctgg gcgtcatgga caagagcact
180
gccatcccca aagccagctc ttctgagtct ctttcggcca aaacctgcag cttatttctg
240
cccaattacg ttcaggacaa gtatctgtta cagcttctaa gaaacgcaga tgacgtcagc
300
acctgggtgg ctgcagagat tgtgaccagc cacacctcca agctgcaggt gaacttgctg
360
tccaaatttn tgctgattgc aaaatcttgc tatgagcaga gaaacttcgc gacagccatg
420
cagatcctga gcgggctgga gcacctggcc gtgaggcagt cccctgcctg gagaattctg
480
cctgcaaaga tagcagaggt catggaggag ctgaaagccg tggaggtctt cctgaagagc
540
gacagcctgt gtctgatgga agggcggcgc ttccgggcgc agcccaccct gccctcggcc
600
cacctcctgg ccatgcacat ccagcagctg gagacaggcg gcttcaccat gaccaacggg
660
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gcccacaggt ggagcaagct caggaacatc gcaaaggtgg tgagccaggt gcacgcgttc
720
caggagaacc cttacacctt cagccccgac cccaagctcc agtcgtacct caagcagagg
780
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840
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gctacattcc agtagccgag ctcgggcctg gtgtggaatt ccagatccga atccgactgt
960
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1020
gcccccgaac cctggggagc tggaccagga ggtggaggct caggggaccc catggggaca
1080
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1140
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1200
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1260
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1320
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1380
ctgacctctg agtggccaac tgcagctccc agggactccg agacctccgg tccgagaccc
1440
tgcctgggtt cacccccac aacccagacc cagaaccgct ctcccttcc ctgcccagtg
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1560
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1575

<210> 4964
<211> 304
<212> PRT
<213> Homo sapiens

<400> 4964
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Tyr Phe Leu Thr Glu Tyr Ser Thr His Gln Leu Phe Ser Gln Leu Thr
                20   25   30
Leu Leu Gln Gln Glu Leu Phe Gln Lys Cys His Pro Val His Phe Leu
            35   40   45
Asn Ser Arg Ala Leu Gly Val Met Asp Lys Ser Thr Ala Ile Pro Lys
        50   55   60
Ala Ser Ser Ser Glu Ser Leu Ser Ala Lys Thr Cys Ser Leu Phe Leu
65   70   75   80
Pro Asn Tyr Val Gln Asp Lys Tyr Leu Leu Gln Leu Leu Arg Asn Ala
                85   90   95
Asp Asp Val Ser Thr Trp Val Ala Ala Glu Ile Val Thr Ser His Thr
                100   105   110
Ser Lys Leu Gln Val Asn Leu Leu Ser Lys Phe Xaa Leu Ile Ala Lys

```
         115                    120                    125
Ser Cys Tyr Glu Gln Arg Asn Phe Ala Thr Ala Met Gln Ile Leu Ser
     130                    135                    140
Gly Leu Glu His Leu Ala Val Arg Gln Ser Pro Ala Trp Arg Ile Leu
145                    150                    155                    160
Pro Ala Lys Ile Ala Glu Val Met Glu Glu Leu Lys Ala Val Glu Val
                 165                    170                    175
Phe Leu Lys Ser Asp Ser Leu Cys Leu Met Glu Gly Arg Arg Phe Arg
                 180                    185                    190
Ala Gln Pro Thr Leu Pro Ser Ala His Leu Leu Ala Met His Ile Gln
             195                    200                    205
Gln Leu Glu Thr Gly Gly Phe Thr Met Thr Asn Gly Ala His Arg Trp
         210                    215                    220
Ser Lys Leu Arg Asn Ile Ala Lys Val Val Ser Gln Val His Ala Phe
225                    230                    235                    240
Gln Glu Asn Pro Tyr Thr Phe Ser Pro Asp Pro Lys Leu Gln Ser Tyr
                 245                    250                    255
Leu Lys Gln Arg Ile Ala Arg Phe Ser Gly Ala Asp Ile Ser Thr Leu
             260                    265                    270
Ala Ala Asp Ser Arg Ala Asn Phe His Gln Val Ser Ser Glu Lys His
         275                    280                    285
Ser Arg Lys Ile Gln Asp Lys Leu Arg Arg Met Lys Ala Thr Phe Gln
     290                    295                    300
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<210> 4965
<211> 1474
<212> DNA
<213> Homo sapiens

<400> 4965
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ccccaagcag agagcacgct gctcagggac agagctgggc ttgtgaccat gtgtcgccct   180
ggcgctgtgc ttccaggtcc tcgcctggag ggcagctgta ttctcagaga gccagccttt   240
cctacagccc ttttagtgac caggggcatt tcctaccctc acttgatctc aaagccacgg   300
tcggtaggaa caaaaaggtg ggttttctag caggctggaa atggccagca ggggagcaag   360
ccgcggctgc ctgggagtgt cgggtggtca ggtcaggctg tagatgtatc ctgtagactc   420
aaggccgctt ctcaggagtc cagagtccca taaaccacca tgagtgccct cctgggatct   480
cattctgctc agaaactcat tgattttact ctgaagcacc cacgaatgac agattcccag   540
gaggggcaga gaaggctgag cggcaccacg tggggctggc cgcgggttgt gggcatgagc   600
acgcctggag aggccatggg gctggtgaca agctctggcc agaagacccc aagaaggtct   660
gatcctgggg tctgatccag gcctgcggca ctgggtccta ggcagactgt ctgcctggtg   720

                                 4134
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agacgtggaa ggagccagtg tccgcagccg tctcaggacg tcagagagct cggtggcctg
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840
gccacatgga caggtagctc agggtgaggt cgggatcccc ggtgtgggca agctccttgg
900
ccaccgtgcg cttcaggagc agctccttcc tgtacatctc caagagctta tgcgaaacct
960
catagaaatg ggttgtaggc cacgtgtgga acagaggggg tcgtttactc tcctccccat
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1080
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1140
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1260
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1320
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1380
caagagtctt tgcttccata aggtccacag atatccgtag aaggagctgc tcctgaagcg
1440
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1474


<210> 4966
<211> 212
<212> PRT
<213> Homo sapiens

<400> 4966
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            20                  25                  30
Leu Ile Leu Lys Trp Glu Thr Leu Asn Asp Ala Gly Phe Thr Thr Ala
        35                  40                  45
Asn Asn Ile Ala Asn Leu Lys Ile Ser Leu Leu Asn Lys Asp Lys Ile
    50                  55                  60
Glu Leu Asp Ser Ser Ser Pro Ala Ser Lys Glu Asn Glu Glu Lys Val
65                  70                  75                  80
Cys Leu Glu Tyr Asn Glu Glu Leu Glu Lys Leu Cys Glu Glu Leu Gln
                85                  90                  95
Ala Thr Leu Asp Gly Leu Thr Lys Ile Gln Val Lys Met Glu Lys Leu
            100                 105                 110
Ser Ser Thr Thr Lys Gly Ile Cys Glu Leu Glu Asn Tyr His Tyr Gly
        115                 120                 125
Glu Glu Ser Lys Arg Pro Pro Leu Phe His Thr Trp Pro Thr Thr His
    130                 135                 140
Phe Tyr Glu Val Ser His Lys Leu Leu Glu Met Tyr Arg Lys Glu Leu
145                 150                 155                 160
Leu Leu Lys Arg Thr Val Ala Lys Glu Leu Ala His Thr Gly Asp Pro

4135

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                    165                      170                      175
        Asp Leu Thr Leu Ser Tyr Leu Ser Met Trp Leu His Gln Pro Tyr Val
                    180                      185                      190
        Glu Ser Asp Ser Arg Leu His Leu Glu Ser Met Leu Leu Glu Thr Gly
                    195                      200                      205
        His Arg Ala Leu
            210
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<210> 4967
<211> 550
<212> DNA
<213> Homo sapiens

<400> 4967
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120
cgccttgacc tccaaaatag ctggngttac acgcgtgagc ccccatgccc agcttcccag
180
taagacattt attctgagga gttggctcac atgagtaagg aggctgagaa gttccacaat
240
ctgaacattc aggagaaagc tggtgatgta atttggtctg agtcccaatg cctgagaacc
300
acagaagccg atggtataaa tcccagtgca aaggcaggag aagacccatg tcccagctca
360
gaaggcaggc aggaagcaaa aggggcaaat ttctccgtcc tctgcctctt ttttttctat
420
tcaggctctc agaggcttgg atgatgtcca ttcacattgg gcagggctag gtacttttct
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tgtttaatct
550
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<210> 4968
<211> 51
<212> PRT
<213> Homo sapiens

<400> 4968
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        Tyr Ser Ser Leu Gln Pro Arg Thr Pro Gly Leu Lys Gln Ser Phe Arg
                    20                  25                  30
        Leu Asp Leu Gln Asn Ser Trp Xaa Tyr Thr Arg Glu Pro Pro Cys Pro
                    35                  40                  45
        Ala Ser Gln
            50
```

<210> 4969
<211> 2911
<212> DNA
<213> Homo sapiens

<400> 4969

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120
gatgagaagg gtgcgggggc ccttcccttc ctaccagggg tctttggcta cgcagtgaat
180
cctcaagcag caccccctgc cccaccaaca ccacctcccc caactcttcc tccaccaatt
240
cccctaagg gagaagggga aagggcaggg gttgagagaa cccagaaggg cgatgtgggg
300
ntgaaccctg gggctcaatc ccccttcac cagatgccac cctccctgaa cccccacca
360
ctaccagctc cctggcctcc ctgccccttg ggagcccctt cacactcttg tgcagggact
420
tggggcccc tggagctcag gggtcaggct gctttgtgtg agatgtagtt ttcccatctc
480
ctgggaaggg atctttcgag gttcccctct cagtcttcct ccagggaatg gcctccatga
540
ggggcagggc cagcttccat cccttctcca gcccttgggg caactgagca atatacttaa
600
cctgaatctc tactcacagc ccccaccagc tctgaatgtc taacctgctc ccctgattcg
660
taaacctagg ggaaaccatc tctctcacct aatgacccgc cttgttctga agctttctct
720
aagcccttcc cagttgcttc ctagcacatt ccattctttg tggcccaggg ctggaccaga
780
ccattgtgat acctgacccc gcccacctgg gagtgtggct ttgggtttca tccttcccca
840
gcgtgggtct ctacgtccct gtttcccttg tatcaagaca ccttcctcag cttccatgcc
900
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960
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1020
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1080
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1140
ctattctggg ctagaccaga tttgggggcc aggagggaag aactccatat gggatggaga
1200
agggaatcta ctttctccct gttttttttt cctgatggtt tctcccagac tagaccaaat
1260
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1320
catccttacc tgtattccca tctccccagt gtcactcccc tcaccaatca ctccagatgg
1380
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1440
tcaaaatagc accttacacc ccatctttga ctcagttccc cacacccaaa gatcccagcc
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tagggatggg gtacagggac tttaaatagt ccctaatccc taatttgcac tagttaaccc
1560
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4137

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1620

ttgaaaactg ggcctccctg ctctgtgatt ggataaatat ttcccatccc acccacctcc
1680

ccccaaaaaa tagctcacaa ggggagagcc agtatggggg agcaaatttg acaaatggga
1740

attagaggag tgcagtttta aaaggaaaag ttgctgtcat caaaatggca gccttttccc
1800

cagctactgt ttttggggcc aagatggctg ccctagcagc aatcactgcc aagggcaaga
1860

tcatggcttt tggagggagg tgagtttagg gagggccagg accatcctcc tacccctcat
1920

accctcccag catatacaaa aggggaggtt ttagacaggc tccctgaatg ttaaccacag
1980

aggagtcact ccttcattcc tcctctgtct ctttgcactt ttcttggtct tggccacagc
2040

ctgagtgacg aatttcctac tgaatgtacc aagttccaat ttttaagggg gggaaaggtt
2100

tcaaatgggg aaaaacacac aaaaaaaaaa tcactaaaaa ttcccacaaa tcttgtttct
2160

ggcactttag aaaaactgca aaaaaatacg taataaagaa tacatatata tatatctaca
2220

cacaaattat atatctatct atctatacag cggaaccaca agagagactg aggaaggcct
2280

ggaggcaggg gcagaggtga cgacagtgcc cctatatcct taacccatac tcctctgagg
2340

caaacaggca tgggaaaatg gaagggttga ggatggaccg gagaattgga acttcagaat
2400

aggtcaaaat tccaaaacca tggacatttt tttttgggag aattgagatt gtagacattt
2460

ttttttttctt aaatatgatc aaggaaaata gcttccagaa tgtggtggtt ctgggcaaca
2520

aatgagattg tggcgacgtg gagattaaaa tatatgtatt tgagctgggg aatttgaata
2580

ttgtgagttt cagatgttgg aaatttggga ttttgcagtt ttgtcttttg aaaatgatca
2640

agtcttgtca gttcgtgccc tctttcccca tgttccctgg gaagacgggt ggtggcagag
2700

tgagaaggcc actggttctg tgccgcagca cgcaaaattt agaattctac agactagctc
2760

tatacgtagt gaggacccag atttagagaa actgaccaat atttatctcc gcatttgtgt
2820

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2880

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2911

<210> 4970
<211> 155
<212> PRT
<213> Homo sapiens

<400> 4970
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4138

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                20                        25                    30
Val Ala Leu Asn Met Val Leu Pro Asp Glu Lys Gly Ala Gly Ala Leu
            35                        40                    45
Pro Phe Leu Pro Gly Val Phe Gly Tyr Ala Val Asn Pro Gln Ala Ala
        50                        55                    60
Pro Pro Ala Pro Pro Thr Pro Pro Pro Thr Leu Pro Pro Pro Ile
65                        70                        75                80
Pro Pro Lys Gly Glu Gly Glu Arg Ala Gly Val Glu Arg Thr Gln Lys
                85                        90                    95
Gly Asp Val Gly Xaa Asn Pro Gly Ala Gln Ser Pro Phe His Gln Met
                100                       105                   110
Pro Pro Ser Leu Asn Pro Pro Pro Leu Pro Ala Pro Trp Pro Pro Cys
        115                       120                   125
Pro Leu Gly Ala Pro Ser His Ser Cys Ala Gly Thr Trp Gly Pro Leu
        130                       135                   140
Glu Leu Arg Gly Gln Ala Ala Leu Cys Glu Met
145                       150                   155
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<210> 4971
<211> 2939
<212> DNA
<213> Homo sapiens

<400> 4971
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120
gcagtctta atctgataaa gcggttatct cgtcttgagt cccaggtgcc gagtcaatcc
180
ccatacacag ccgccgccat tgcctcgagt ccttgtgtct gactgtctgt tcctgctgct
240
gtatgacaca gcacctcgag gcaaggaaat aagaaaactg cctctgatcc aagcagagaa
300
ggtcagtgag aaggtctgcc tgtagatctg ctgtagggct tgtcaccatt ggaagcaagg
360
tcctacttca gtggcagatc tggtggcctt ggagtggctg aagaccacca ccctccacag
420
ggctgggccc atgcacagcc atccttccct accttgagtg agcttcctct gcatgttttc
480
tatatcactg gcagagcctg tagttggaaa ggggacagag tgactactgg actttgtgtg
540
aaaacaccaa ccgggacaaa acttcagtca aggctgagac gggtgggggt atataacttg
600
tccttacgtt aaacttggaa catggttgac tctgggacag aagcaagggc tagaggaaag
660
gctgaggctg gcctgcaaga tggaatcagt ggtcctgcca ctgctagagt gaatggtaaa
720
acccaggccg aggcagtggc tgaggcagaa ctgaaaacag aatcagtgac ccaggccaaa
780
gctggtgatg gagcaatgac caggacacat acagtgacct acagggaggc tatggctgtg
840
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acaagggaag tgatcaaggt ggaagataca actaagacta gagtcatggt tgagactaag
900
acaaaacccc tggcagaacg cagtatagtg ccacaaacca agtcaaaggc catgcctatg
960
tctagggtca gtactgtaac caagtctgaa gtcaaggttg ttgctgtcat tgaggcaaat
1020
attaggtcct atgccaagtc acatgataag gccaatactg ggtccagacc tgacagaagg
1080
gaagagacca gcattgggat gaaatccagt gatgaggatg aagaaaatat atgctcctgg
1140
ttctggactg gagaagagcc tagtgtaggg tcctggttct ggcctgaaga agagacctct
1200
cttcaagttt ataagcccct acctaagatc caggaaaagc ccaagcccac acacaaaccc
1260
acacttacta taaaacaaaa ggtaatagca tggtcaaggg ccaggtatat tgtcctagtt
1320
ccagttgaag gaggggagca atccttgcct ccagaaggaa actggaccct ggttgagacc
1380
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1440
tattaccaga ccttagctga gatcaaaaaa cagattaggc aaagggaaaa gtatgggcct
1500
aatccgaagg cctgccactg caaatcacgt ggctttagtt tagagcctaa agagtttgat
1560
aaacttgttg ccctccttaa gttaactaag gatcctttca ttcatgaaat agctacaatg
1620
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1680
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1740
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1800
catcaagttt gtaaaggcat aatctcttgc cccttgaact ccctgtgca gctggctgga
1860
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1920
attccagatt tcctcacctt gttaaacaag ggaagtgtca aaaccaagtt ttatgtttta
1980
aaagtgtttt cgtgtttgtc taaaaatcac gccaatacaa gagaattgat cagtgccaaa
2040
gtactgtcat cattggttgc accctttaac aagaatgagt caaaggccaa tattcttaat
2100
attattgaaa tatttgagaa tataaatttt cagttcaaaa caaaggcaaa gctatttacc
2160
aaggaaaagt tcactaaatc tgagcttatt tcaatattcc aggaagcaaa acagtttggt
2220
cagaaactcc aagacttagc agagcacagt gatcccgaag tgagagataa agtcatacga
2280
ttaatactaa aactctgaat acccctctgt tctcataaag cctcaaacag tttttggag
2340
ttgcaatatg aaaccaatgc atattgtaat tataaattca atacttatgt tttccatgtt
2400
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2460
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4140

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ttttattgtg ctatatagta tataaattga gatatttttg gtatttctgc aacgtgacct
2520
gataatgaat ctattcatcc tgagtaagct atacttctgt gctttatatt gatatgtgta
2580
ttcttttgag attttatta catgttgtta ataaagttgc atgctaaaac tggtgaaaat
2640
attgtcctag ttcttcagct gaaatctagt ctgggggggat aaagcacaga gagcataaag
2700
atggtgaaga acactgcctg tgtgtctgta gtggggcaca aacaaaacaa gttcacattg
2760
acagattatt tagtttcgac atacttaaaa agtagaatca ctctatgcaa gaaggcagga
2820
ctgtgctatt agttgtctgt aggctcctac tgatagggct tcaaatgagg aatgaagccc
2880
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2939
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<210> 4972
<211> 558
<212> PRT
<213> Homo sapiens

<400> 4972
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             20                  25                  30
Lys Thr Gln Ala Glu Ala Val Ala Glu Ala Glu Leu Lys Thr Glu Ser
             35                  40                  45
Val Thr Gln Ala Lys Ala Gly Asp Gly Ala Met Thr Arg Thr His Thr
             50                  55                  60
Val Thr Tyr Arg Glu Ala Met Ala Val Thr Arg Glu Val Ile Lys Val
 65                  70                  75                  80
Glu Asp Thr Thr Lys Thr Arg Val Met Val Glu Thr Lys Thr Lys Pro
                 85                  90                  95
Leu Ala Glu Arg Ser Ile Val Pro Gln Thr Lys Ser Lys Ala Met Pro
                100                 105                 110
Met Ser Arg Val Ser Thr Val Thr Lys Ser Glu Val Lys Val Val Ala
                115                 120                 125
Val Ile Glu Ala Asn Ile Arg Ser Tyr Ala Lys Ser His Asp Lys Ala
    130                 135                 140
Asn Thr Gly Ser Arg Pro Asp Arg Arg Glu Glu Thr Ser Ile Gly Met
145                 150                 155                 160
Lys Ser Ser Asp Glu Asp Glu Glu Asn Ile Cys Ser Trp Phe Trp Thr
                165                 170                 175
Gly Glu Glu Pro Ser Val Gly Ser Trp Phe Trp Pro Glu Glu Glu Thr
                180                 185                 190
Ser Leu Gln Val Tyr Lys Pro Leu Pro Lys Ile Gln Glu Lys Pro Lys
                195                 200                 205
Pro Thr His Lys Pro Thr Leu Thr Ile Lys Gln Lys Val Ile Ala Trp
    210                 215                 220
Ser Arg Ala Arg Tyr Ile Val Leu Val Pro Val Glu Gly Gly Glu Gln
225                 230                 235                 240
Ser Leu Pro Pro Glu Gly Asn Trp Thr Leu Val Glu Thr Leu Ile Glu
```

4141

```
                  245                  250                  255
Thr Pro Leu Gly Ile Arg Pro Leu Thr Lys Ile Pro Pro Tyr His Gly
              260                  265                  270
Pro Tyr Tyr Gln Thr Leu Ala Glu Ile Lys Lys Gln Ile Arg Gln Arg
          275                  280                  285
Glu Lys Tyr Gly Pro Asn Pro Lys Ala Cys His Cys Lys Ser Arg Gly
      290                  295                  300
Phe Ser Leu Glu Pro Lys Glu Phe Asp Lys Leu Val Ala Leu Leu Lys
305                  310                  315                  320
Leu Thr Lys Asp Pro Phe Ile His Glu Ile Ala Thr Met Ile Met Gly
              325                  330                  335
Ile Ser Pro Ala Tyr Pro Phe Thr Gln Asp Ile Ile His Asp Val Gly
          340                  345                  350
Ile Thr Val Met Ile Glu Asn Leu Val Asn Asn Pro Asn Val Lys Glu
          355                  360                  365
His Pro Gly Ala Leu Ser Met Val Asp Asp Ser Ser Glu Ser Ser Glu
      370                  375                  380
Glu Pro Lys Ser Gly Glu Ser Tyr Ile His Gln Val Cys Lys Gly Ile
385                  390                  395                  400
Ile Ser Cys Pro Leu Asn Ser Pro Val Gln Leu Ala Gly Leu Lys Leu
              405                  410                  415
Leu Gly His Leu Ser Ile Lys Phe Glu Asp His Tyr Val Ile Thr Ser
          420                  425                  430
Tyr Ile Pro Asp Phe Leu Thr Leu Leu Asn Lys Gly Ser Val Lys Thr
          435                  440                  445
Lys Phe Tyr Val Leu Lys Val Phe Ser Cys Leu Ser Lys Asn His Ala
      450                  455                  460
Asn Thr Arg Glu Leu Ile Ser Ala Lys Val Leu Ser Ser Leu Val Ala
465                  470                  475                  480
Pro Phe Asn Lys Asn Glu Ser Lys Ala Asn Ile Leu Asn Ile Ile Glu
              485                  490                  495
Ile Phe Glu Asn Ile Asn Phe Gln Phe Lys Thr Lys Ala Lys Leu Phe
          500                  505                  510
Thr Lys Glu Lys Phe Thr Lys Ser Glu Leu Ile Ser Ile Phe Gln Glu
          515                  520                  525
Ala Lys Gln Phe Gly Gln Lys Leu Gln Asp Leu Ala Glu His Ser Asp
      530                  535                  540
Pro Glu Val Arg Asp Lys Val Ile Arg Leu Ile Leu Lys Leu
545                  550                  555
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<210> 4973
<211> 3555
<212> DNA
<213> Homo sapiens

<400> 4973
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atactgaggg agcacaggag cagtcaccgc tgccactgct actgccgcta ctgctgccgg
120
cgcgtctgca cctctcggcc tgccagtgta cctgccggcg cctcggtcga ccgccccgc
180
cccctctccc gctgcgtccg cactcctgtt cctggtcctg acgcccccct cccgcccgga
240

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aagctgccca gccaccagca acccccccagt gccaccatgg caactgcacc atacaactac
300
tcttacatct ttaaatatat tattattggg gacatgggag taggaaaatc ttgcttgctt
360
catcaattta cagaaaaaaa atttatggct gattgtcctc acacaattgg tgttgaattt
420
ggtacaagaa taatcgaagt tagtggccaa aaaataaaac tgcagatttg ggatacggca
480
ggacaggagc gatttagggc tgttacacgg agctactaca gaggagctgc gggagctctt
540
atggtctatg atatcactag aagaagtaca tataaccact taagcagctg gttgacagat
600
gcaaggaatc tcaccaatcc aaatactgta ataattctca taggaaataa agcagatttg
660
gaggcacaga gagatgttac atatgaagaa gccaaacagt ttgctgaaga aaatggctta
720
ttgttcctcg aagcgagtgc aaaaacggga gagaatgtag aagatgcctt ccttgaggct
780
gccaagaaaa tctatcagaa cattcaggat ggaagcttgg atctgaatgc tgctgagtct
840
ggtgtacaac acaaaccttc agccccgcag ggaggccggc taaccagtga accccaaccc
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960
cctctgtctg ttggaagcag tacttttac tgcctcattg tcttctgtac atcttactgg
1020
gtttaattaa aaaaaagaa aaactctgt tgtaaaaaca gtttaacaca atactaaact
1080
gctaaacaac tagatgtaat caggttatca aaggcaagta gagtaataaa tctctcctgc
1140
atggtaaatc tagacttttt ttccccttg tcctcgtgat aagtatgtca ccaatatatg
1200
atttaaaccg agcactgatg ctggacttca tgattttac cctccctttg gcaaggcttt
1260
gtctcactgt acggtttaat ttggtgatat cttaagcctt tcttcccatc cttaactgtt
1320
caagtatgtc tgttgtaacc aataagttta ttgctgtgaa attacttctg atggtagaga
1380
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1440
ttttcttaac gagatttgct tctgtcttag cctcacacag gaaaaatatc catttatctt
1500
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1560
aacagaaagt aaatatgtat aaaatttgaa ggaatcgaac taacaataca ttctgtgtat
1620
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1680
tgtacagtat gacctatatg tgaccatgtt actcccttcc atttcacaca aagaaataga
1740
cacaactgca gttcacaagt agtactggct ccacccctg gtgctggcag tgtttgggga
1800
cattatgctg gaaagagctc ctagcatcag aggattaaca ctagcagatt ctgttccatc
1860
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4143

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tttgcactgt tgcttacctg ctgattttct taactgttct tgtgcaatcg acaatgtgct
1920
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1980
tatagaaaaa gaaaaaggc tgggtttact attgcacatt ttaagctttt ataccttat
2040
cttcttggaa tggtcagatt ctgaactgga cagtcagaac cacaggtctg ctgttaaggg
2100
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2160
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2280
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2460
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2520
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2580
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2700
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2760
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2880
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3000
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3060
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3120
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3180
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3240
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3300
gattctatca tatgcatgtg taatcccctg taatacactc aggtgctcac aaatagagca
3360
gattgtcata ttgtaacatg cgtgtgccag acaccgggca gtacactttg gaaagaatgt
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gaaatccttt taatttttaa tccatagctt actgcttgtg cagtcacctg cctctcgagg
3480
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3555

<210> 4974
<211> 215
<212> PRT
<213> Homo sapiens

<400> 4974
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Ile Gly Asp Met Gly Val Gly Lys Ser Cys Leu Leu His Gln Phe Thr
            20   25   30
Glu Lys Lys Phe Met Ala Asp Cys Pro His Thr Ile Gly Val Glu Phe
        35   40   45
Gly Thr Arg Ile Ile Glu Val Ser Gly Gln Lys Ile Lys Leu Gln Ile
    50   55   60
Trp Asp Thr Ala Gly Gln Glu Arg Phe Arg Ala Val Thr Arg Ser Tyr
65   70   75   80
Tyr Arg Gly Ala Ala Gly Ala Leu Met Val Tyr Asp Ile Thr Arg Arg
                85   90   95
Ser Thr Tyr Asn His Leu Ser Ser Trp Leu Thr Asp Ala Arg Asn Leu
            100   105   110
Thr Asn Pro Asn Thr Val Ile Ile Leu Ile Gly Asn Lys Ala Asp Leu
            115   120   125
Glu Ala Gln Arg Asp Val Thr Tyr Glu Glu Ala Lys Gln Phe Ala Glu
    130   135   140
Glu Asn Gly Leu Leu Phe Leu Glu Ala Ser Ala Lys Thr Gly Glu Asn
145   150   155   160
Val Glu Asp Ala Phe Leu Glu Ala Ala Lys Lys Ile Tyr Gln Asn Ile
                165   170   175
Gln Asp Gly Ser Leu Asp Leu Asn Ala Ala Glu Ser Gly Val Gln His
            180   185   190
Lys Pro Ser Ala Pro Gln Gly Gly Arg Leu Thr Ser Glu Pro Gln Pro
            195   200   205
Gln Arg Glu Gly Cys Gly Cys
    210   215

<210> 4975
<211> 1111
<212> DNA
<213> Homo sapiens

<400> 4975
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acactcagcc ctttgtggtc ctgcccaagg aattcccagt gtacctgtgg cagcccttct
120
tcagacacgg ctacttctgc ttccacgagg ctgctgacca gaagaggttt agtgccctcc
180
tgagtgactg cgtcaggcat ctcaatcatg attacatgaa gcagatgaca tttgaagccc
240

4145

aggccttttt agaagctgtg caattcttcc gacaggagaa gggtcactat ggttcctggg
300
aaatgatcac tggggatgaa atccagatcc tgagtaacct ggtgatggag gagctcctgc
360
ccactcttca gacagacctg ctgcctaaga tgaaggggaa gaagaatgac agaaagagga
420
cgtggcttgg tctcctcgag gaggcctaca ccctggttca gcatcaagtt tcagaaggat
480
taagtgcctt gaaggaggaa tgcagagctc tgacaaaggg cctggaagga acgatccgtt
540
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600
tggcccagcc ggcggagaaa agctgcttgg agagtgtgca gccattcctg gcatccatcc
660
tggaggagct catgggacca gtgagctcgg gattcagtga agtacgtgta ctctttgaga
720
aagaggtgaa tgaagtcagc cagaacttcc agaccaccaa agacagtgtc cagctaaagg
780
agcatctaga ccggcttatg aatcttccgc tgcattccgt gaagatggaa ccttgttata
840
ctaaagtcaa cctgcttcac gagcgcctgc aggatctcaa gagccgcttc agattccccc
900
acattgatct ggtggttcag aggacacaga actacatgca ggagctaatg gagaatgcag
960
tgttcacttt tgagcagttg ctttcccccac atctccaagg agaggcctcc aaaactgcat
1020
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1080
tccgaaagaa gatatttcaa gaggcactag t
1111

<210> 4976
<211> 298
<212> PRT
<213> Homo sapiens

<400> 4976

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Phe Phe Arg Gln Glu Lys Gly His Tyr Gly Ser Trp Glu Met Ile Thr
            20                  25                  30
Gly Asp Glu Ile Gln Ile Leu Ser Asn Leu Val Met Glu Glu Leu Leu
        35                  40                  45
Pro Thr Leu Gln Thr Asp Leu Leu Pro Lys Met Lys Gly Lys Lys Asn
    50                  55                  60
Asp Arg Lys Arg Thr Trp Leu Gly Leu Leu Glu Glu Ala Tyr Thr Leu
65                  70                  75                  80
Val Gln His Gln Val Ser Glu Gly Leu Ser Ala Leu Lys Glu Glu Cys
                85                  90                  95
Arg Ala Leu Thr Lys Gly Leu Glu Gly Thr Ile Arg Ser Asp Met Asp
            100                 105                 110
Gln Ile Val Asn Ser Lys Asn Tyr Leu Ile Gly Lys Ile Lys Ala Met
        115                 120                 125
Val Ala Gln Pro Ala Glu Lys Ser Cys Leu Glu Ser Val Gln Pro Phe
```

4146

```
      130                     135                     140
Leu Ala Ser Ile Leu Glu Glu Leu Met Gly Pro Val Ser Ser Gly Phe
145                     150                     155                     160
Ser Glu Val Arg Val Leu Phe Glu Lys Glu Val Asn Glu Val Ser Gln
                165                     170                     175
Asn Phe Gln Thr Thr Lys Asp Ser Val Gln Leu Lys Glu His Leu Asp
                180                     185                     190
Arg Leu Met Asn Leu Pro Leu His Ser Val Lys Met Glu Pro Cys Tyr
            195                     200                     205
Thr Lys Val Asn Leu Leu His Glu Arg Leu Gln Asp Leu Lys Ser Arg
        210                     215                     220
Phe Arg Phe Pro His Ile Asp Leu Val Val Gln Arg Thr Gln Asn Tyr
225                     230                     235                     240
Met Gln Glu Leu Met Glu Asn Ala Val Phe Thr Phe Glu Gln Leu Leu
                245                     250                     255
Ser Pro His Leu Gln Gly Glu Ala Ser Lys Thr Ala Phe Ser Ile Glu
                260                     265                     270
Lys Val Lys Leu Arg Val Leu Lys Gln Tyr Asp Tyr Asp Ser Ser Thr
            275                     280                     285
Ile Arg Lys Lys Ile Phe Gln Glu Ala Leu
            290                     295
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<210> 4977
<211> 3309
<212> DNA
<213> Homo sapiens

<400> 4977
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tgggcaccgc ccttaggagg gccaccctca gagtctgaca gcaggtgaag gtcctaaatc
120
tccccaaact aactggtgtc ttttctcctc ttccaagatg ctcttcccga gggagatgct
180
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2820

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3300

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3309

<210> 4978
<211> 792
<212> PRT
<213> Homo sapiens

<400> 4978
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            20   25   30
Glu Thr Thr Thr Ser Thr Ile Ile Thr Thr Thr Val Ile Thr Thr Glu
        35   40   45
Gln Ala Pro Ala Leu Cys Ser Val Ser Phe Ser Asn Pro Glu Gly Tyr
    50   55   60
Ile Asp Ser Ser Asp Tyr Pro Leu Leu Pro Leu Asn Asn Phe Leu Glu
65   70   75   80
Cys Thr Tyr Asn Val Thr Val Tyr Thr Gly Tyr Gly Val Glu Leu Gln
                85   90   95
Val Lys Ser Val Asn Leu Ser Asp Gly Glu Leu Leu Ser Ile Arg Gly
            100   105   110
Val Asp Gly Pro Thr Leu Thr Val Leu Ala Asn Gln Thr Leu Leu Val

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            115                    120                    125
Glu Gly Gln Val Ile Arg Ser Pro Thr Asn Thr Ile Ser Val Tyr Phe
   130                    135                    140
Arg Thr Phe Gln Asp Asp Gly Leu Gly Thr Phe Gln Leu His Tyr Gln
145                    150                    155                    160
Ala Phe Met Leu Ser Cys Asn Phe Pro Arg Arg Pro Asp Ser Gly Asp
                    165                    170                    175
Val Thr Val Met Asp Leu His Ser Gly Gly Val Ala His Phe His Cys
                    180                    185                    190
His Leu Gly Tyr Glu Leu Gln Gly Ala Lys Met Leu Thr Cys Ile Asn
                    195                    200                    205
Ala Ser Lys Pro His Trp Ser Ser Gln Glu Pro Ile Cys Ser Ala Pro
   210                    215                    220
Cys Gly Gly Ala Val His Asn Ala Thr Ile Gly Arg Val Leu Ser Pro
225                    230                    235                    240
Ser Tyr Pro Glu Asn Thr Asn Gly Ser Gln Phe Cys Ile Trp Thr Ile
                    245                    250                    255
Glu Ala Pro Glu Gly Gln Lys Leu His Leu His Phe Glu Arg Leu Leu
                    260                    265                    270
Leu His Asp Lys Asp Arg Met Thr Val His Ser Gly Gln Thr Asn Lys
                    275                    280                    285
Ser Ala Leu Leu Tyr Asp Ser Leu Gln Thr Glu Ser Val Pro Phe Glu
   290                    295                    300
Gly Leu Leu Ser Glu Gly Asn Thr Ile Arg Ile Glu Phe Thr Ser Asp
305                    310                    315                    320
Gln Ala Arg Ala Ala Ser Thr Phe Asn Ile Arg Phe Glu Ala Phe Glu
                    325                    330                    335
Lys Gly His Cys Tyr Glu Pro Tyr Ile Gln Asn Gly Asn Phe Thr Thr
                    340                    345                    350
Ser Asp Pro Thr Tyr Asn Ile Gly Thr Ile Val Glu Phe Thr Cys Asp
                    355                    360                    365
Pro Gly His Ser Leu Glu Gln Gly Pro Ala Ile Ile Glu Cys Ile Asn
   370                    375                    380
Val Arg Asp Pro Tyr Trp Asn Asp Thr Glu Pro Leu Cys Arg Ala Met
385                    390                    395                    400
Cys Gly Gly Glu Leu Ser Ala Val Ala Gly Val Val Leu Ser Pro Asn
                    405                    410                    415
Trp Pro Glu Pro Tyr Val Glu Gly Glu Asp Cys Ile Trp Lys Ile His
                    420                    425                    430
Val Gly Glu Glu Lys Arg Ile Phe Leu Asp Ile Gln Phe Leu Asn Leu
   435                    440                    445
Ser Asn Ser Asp Ile Leu Thr Ile Tyr Asp Gly Asp Glu Val Met Pro
   450                    455                    460
His Ile Leu Gly Gln Tyr Leu Gly Asn Ser Gly Pro Gln Lys Leu Tyr
465                    470                    475                    480
Ser Ser Thr Pro Asp Leu Thr Ile Gln Phe His Ser Asp Pro Ala Gly
                    485                    490                    495
Leu Ile Phe Gly Lys Gly Gln Gly Phe Ile Met Asn Tyr Ile Glu Val
                    500                    505                    510
Ser Arg Asn Asp Ser Cys Ser Asp Leu Pro Glu Ile Gln Asn Gly Trp
                    515                    520                    525
Lys Thr Thr Ser His Thr Glu Leu Val Arg Gly Ala Arg Ile Thr Tyr
   530                    535                    540
Gln Cys Asp Pro Gly Tyr Asp Ile Val Gly Ser Asp Thr Leu Thr Cys  .
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545                  550                  555                  560
Gln Trp Asp Leu Ser Trp Ser Ser Asp Pro Pro Phe Cys Glu Lys Ile
                    565                  570                  575
Met Tyr Cys Thr Asp Pro Gly Glu Val Asp His Ser Thr Arg Leu Ile
                580                  585                  590
Ser Asp Pro Val Leu Leu Val Gly Thr Thr Ile Gln Tyr Thr Cys Asn
                595                  600                  605
Pro Gly Phe Val Leu Glu Gly Ser Ser Leu Leu Thr Cys Tyr Ser Arg
            610                  615                  620
Glu Thr Gly Thr Pro Ile Trp Thr Ser Arg Leu Pro His Cys Val Ser
625                  630                  635                  640
Glu Glu Ser Leu Ala Cys Asp Asn Pro Gly Leu Pro Glu Asn Gly Tyr
                645                  650                  655
Gln Ile Leu Tyr Lys Arg Leu Tyr Leu Pro Gly Glu Ser Leu Thr Phe
                660                  665                  670
Met Cys Tyr Glu Gly Phe Glu Leu Met Gly Glu Val Thr Ile Arg Cys
            675                  680                  685
Ile Leu Gly Gln Pro Ser His Trp Asn Gly Pro Leu Pro Val Cys Lys
            690                  695                  700
Val Asn Gln Asp Ser Phe Glu His Ala Leu Glu Ala Glu Ala Ala Ala
705                  710                  715                  720
Glu Thr Ser Leu Glu Gly Gly Asn Met Ala Leu Ala Ile Phe Ile Pro
                725                  730                  735
Val Leu Ile Ile Ser Leu Leu Leu Gly Gly Ala Tyr Ile Tyr Ile Thr
                740                  745                  750
Arg Cys Arg Tyr Tyr Ser Asn Leu Arg Leu Pro Leu Met Tyr Ser His
                755                  760                  765
Pro Tyr Ser Gln Ile Thr Val Glu Thr Glu Phe Asp Asn Pro Ile Tyr
            770                  775                  780
Glu Thr Gly Gly Thr Gln Lys Val
785                  790

<210> 4979
<211> 1865
<212> DNA
<213> Homo sapiens

<400> 4979
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cgagccgtca gtccccgggt gcgagtccct gctgtcttcc acacccttcc tccctccagg
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240
gcaggtgtgg ggggcgtgcg gggtggcacg agacaaaagg ggcacggggg taagcccgcc
300
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360
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480
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720
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780
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1380
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1440
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<210> 4980
<211> 266
<212> PRT
<213> Homo sapiens

<400> 4980
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            20   25   30
Leu Arg Thr Leu Gly Ser Ser Gly Ser Glu Ser Ser Thr Pro Glu Asn
            35   40   45
Val Gly Pro Pro Phe Leu Met Asp Glu Asn Ser Trp Phe Asn Lys Cys
    50   55   60
Lys Arg Val Lys Gln Lys Tyr Gln Leu Thr Leu Glu Gln Lys Gly Tyr
65   70   75   80
Leu Glu Glu Leu Leu Arg Leu Arg Glu Asn Gln Leu Ser Glu Ser Val
                85   90   95
Ser Gln Asn Lys Ile Leu Leu Gln Arg Ile Glu Asp Ser Asp Leu Ala
            100   105   110
His Lys Leu Glu Lys Glu Gln Leu Glu Tyr Ile Ile Val Glu Leu Gln
            115   120   125
Asp Gln Leu Thr Val Leu Lys Asn Asn Asp Leu Arg Ser Arg Gln Glu
    130   135   140
Leu Thr Ala His Leu Thr Asn Gln Trp Pro Ser Pro Gly Ala Leu Asp
145   150   155   160
Val Asn Ala Val Ala Leu Asp Thr Leu Leu Tyr Arg Lys His Asn Lys
            165   170   175
Gln Trp Lys Ser Tyr Gln Ser Leu Asp Gln Leu Ser Ala Glu Val Ser
            180   185   190
Leu Ser Gln Thr Ser Leu Asp Pro Gly Gln Ser Gln Glu Gly Asp Gly
            195   200   205
Lys Gln Asp Thr Leu Asn Val Met Ser Glu Gly Lys Glu Asp Thr Pro
    210   215   220
Ser Leu Leu Gly Leu Cys Gly Ser Leu Thr Ser Val Ala Ser Tyr Lys
225   230   235   240
Ser Leu Thr Ser Leu Lys Ser Asn Asp Tyr Leu Ala Ser Pro Thr Thr
            245   250   255
Glu Met Thr Ser Pro Gly Leu Thr Pro Ser
            260   265

<210> 4981
<211> 1902
<212> DNA
<213> Homo sapiens

<400> 4981
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360

4153

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1902
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<210> 4982

<211> 73
<212> PRT
<213> Homo sapiens

<400> 4982
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Arg Ser Val Ile Gln Ala Gly Val Gln Trp His Asp Leu Gly Ser Leu
            20   25   30
Gln Pro Pro Ser Pro Arg Phe Lys Arg Phe Ser Cys Leu Leu Leu Ser
        35   40   45
Ser Trp Asp Tyr Arg Cys Ser Pro Pro His Pro Ala Asn Phe Cys Ile
    50   55   60
Phe Ser Arg Asp Gly Val Ser Pro Cys
65   70

<210> 4983
<211> 1418
<212> DNA
<213> Homo sapiens

<400> 4983
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120
catgaaattc tggagcttat tattgaaaaa ctactcaagt tggatgtgaa tgcatcccgg
180
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240
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300
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720
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780
caagctgtgt tctacacctt tgtttttaga cacaagcagc ttttgagcgg aaacctgaaa
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960

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1080
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1140
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1260
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1320
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1380
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1418


<210> 4984
<211> 256
<212> PRT
<213> Homo sapiens


<400> 4984
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Asp Pro Ser Asn Pro Ala Ile Ile Arg Gln Ala Ala Gly Asn Tyr Ile
            20                  25                  30
Gly Ser Phe Leu Ala Arg Ala Lys Phe Ile Pro Leu Ile Thr Val Lys
        35                  40                  45
Ser Cys Leu Asp Leu Leu Val Asn Trp Leu His Ile Tyr Leu Asn Asn
        50                  55                  60
Gln Asp Ser Gly Thr Lys Ala Phe Cys Asp Val Ala Leu His Gly Pro
65                  70                  75                  80
Phe Tyr Ser Ala Cys Gln Ala Val Phe Tyr Thr Phe Val Phe Arg His
                85                  90                  95
Lys Gln Leu Leu Ser Gly Asn Leu Lys Glu Gly Leu Gln Tyr Leu Gln
            100                 105                 110
Ser Leu Asn Phe Glu Arg Ile Val Met Ser Gln Leu Asn Pro Leu Lys
        115                 120                 125
Ile Cys Leu Pro Ser Val Val Asn Phe Phe Ala Ala Ile Thr Asn Lys
        130                 135                 140
Tyr Gln Leu Val Phe Cys Tyr Thr Ile Ile Glu Arg Asn Asn Arg Gln
145                 150                 155                 160
Met Leu Pro Val Ile Arg Ser Thr Ala Gly Gly Asp Ser Val Gln Thr
                165                 170                 175
Cys Thr Asn Pro Leu Asp Thr Phe Phe Pro Phe Asp Pro Cys Val Leu
            180                 185                 190
Lys Arg Ser Lys Lys Phe Ile Asp Pro Ile Tyr Gln Val Trp Glu Asp
            195                 200                 205
Met Ser Ala Glu Glu Leu Gln Glu Phe Lys Lys Pro Met Lys Lys Asp
        210                 215                 220
Ile Val Glu Asp Glu Asp Asp Asp Phe Leu Lys Gly Glu Ile Pro Gln
225                 230                 235                 240
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<210> 4985
<211> 5695
<212> DNA
<213> Homo sapiens

<400> 4985
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                                    4158

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                                     4159

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<210> 4986
<211> 1239
<212> PRT
<213> Homo sapiens
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            20                  25                  30
Met Asn Thr Lys Asp Thr Thr Glu Val Ala Glu Asn Ser His His Leu
        35                  40                  45
Lys Ile Phe Leu Pro Lys Lys Leu Leu Glu Cys Leu Pro Arg Cys Pro
    50                  55                  60
Leu Leu Pro Pro Glu Arg Leu Arg Trp Asn Thr Asn Glu Glu Ile Ala
65                  70                  75                  80
Ser Tyr Leu Ile Thr Phe Glu Lys His Asp Glu Trp Leu Ser Cys Ala
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                        85                90                95
Pro Lys Thr Arg Pro Gln Asn Gly Ser Ile Ile Leu Tyr Asn Arg Lys
                   100               105               110
Lys Val Lys Tyr Arg Lys Asp Gly Tyr Leu Trp Lys Lys Arg Lys Asp
            115               120               125
Gly Lys Thr Thr Arg Glu Asp His Met Lys Leu Lys Val Gln Gly Met
            130               135               140
Glu Pro Val Ser Trp Gln Cys Leu Tyr Gly Cys Tyr Val His Ser Ser
145               150               155               160
Ile Val Pro Thr Phe His Arg Arg Cys Tyr Trp Leu Leu Gln Asn Pro
                   165               170               175
Asp Ile Val Leu Val His Tyr Leu Asn Val Pro Ala Leu Glu Asp Cys
            180               185               190
Gly Lys Gly Cys Ser Pro Ile Phe Cys Ser Ile Ser Ser Asp Arg Arg
            195               200               205
Glu Trp Leu Lys Trp Ser Arg Glu Glu Leu Leu Gly Gln Leu Lys Pro
            210               215               220
Met Phe His Gly Ile Lys Trp Ser Cys Gly Asn Gly Thr Glu Glu Phe
225               230               235               240
Ser Val Glu His Leu Val Gln Gln Ile Leu Asp Thr His Pro Thr Lys
                   245               250               255
Pro Ala Pro Arg Thr His Ala Cys Leu Cys Ser Gly Gly Leu Gly Ser
            260               265               270
Gly Ser Leu Thr His Lys Cys Ser Ser Thr Lys His Arg Ile Ile Ser
            275               280               285
Pro Lys Val Glu Pro Arg Ala Leu Thr Leu Thr Ser Ile Pro His Pro
            290               295               300
His Pro Pro Glu Pro Pro Pro Leu Ile Ala Pro Leu Pro Pro Glu Leu
305               310               315               320
Pro Lys Ala His Thr Ser Pro Ser Ser Ser Ser Ser Ser Ser Ser Ser
                   325               330               335
Gly Phe Ala Glu Pro Leu Glu Ile Arg Pro Ser Pro Pro Thr Ser Arg
                340               345               350
Gly Gly Ser Ser Arg Gly Gly Thr Ala Ile Leu Leu Leu Thr Gly Leu
            355               360               365
Glu Gln Arg Ala Gly Gly Leu Thr Pro Thr Arg His Leu Ala Pro Gln
     370               375               380
Ala Asp Pro Arg Pro Ser Met Ser Leu Ala Val Val Val Gly Thr Glu
385               390               395               400
Pro Ser Ala Pro Pro Ala Pro Pro Ser Pro Ala Phe Asp Pro Asp Arg
            405               410               415
Phe Leu Asn Ser Pro Gln Arg Gly Gln Thr Tyr Gly Gly Gly Gln Gly
            420               425               430
Val Ser Pro Asp Phe Pro Glu Ala Glu Ala Ala His Thr Pro Cys Ser
            435               440               445
Ala Leu Glu Pro Ala Ala Ala Leu Glu Pro Gln Ala Ala Ala Arg Gly
            450               455               460
Pro Pro Pro Gln Ser Val Ala Gly Gly Arg Arg Gly Asn Cys Phe Phe
465               470               475               480
Ile Gln Asp Asp Asp Ser Gly Glu Glu Leu Lys Gly His Gly Ala Ala
                   485               490               495
Pro Pro Ile Pro Ser Pro Pro Pro Ser Pro Pro Pro Ser Pro Ala Pro
            500               505               510
Leu Glu Pro Ser Ser Arg Val Gly Arg Gly Glu Ala Leu Phe Gly Gly
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Asp Leu Met Gly Glu Leu Ile Ser Asp Glu Ala Pro Ser Ile Pro Ala
545                   550                   555                   560
Pro Thr Pro Gln Leu Ser Pro Ala Leu Ser Thr Ile Thr Asp Phe Ser
              565                   570                   575
Pro Glu Trp Ser Tyr Pro Glu Gly Gly Val Lys Val Leu Ile Thr Gly
              580                   585                   590
Pro Trp Thr Glu Ala Ala Glu His Tyr Ser Cys Val Phe Asp His Ile
              595                   600                   605
Ala Val Pro Ala Ser Leu Val Gln Pro Gly Val Leu Arg Cys Tyr Cys
     610                   615                   620
Pro Ala His Glu Val Gly Leu Val Ser Leu Gln Val Ala Gly Arg Glu
625                   630                   635                   640
Gly Pro Leu Ser Ala Ser Val Leu Phe Glu Tyr Arg Ala Arg Arg Phe
              645                   650                   655
Leu Ser Leu Pro Ser Thr Gln Leu Asp Trp Leu Ser Leu Asp Asp Asn
              660                   665                   670
Gln Phe Arg Met Ser Ile Leu Glu Arg Leu Glu Gln Met Glu Lys Arg
              675                   680                   685
Met Ala Glu Ile Ala Ala Ala Gly Gln Val Pro Cys Gln Gly Pro Asp
     690                   695                   700
Ala Pro Pro Val Gln Asp Glu Gly Gln Gly Pro Gly Phe Glu Ala Arg
705                   710                   715                   720
Val Val Val Leu Val Glu Ser Met Ile Pro Arg Ser Thr Trp Lys Gly
              725                   730                   735
Pro Glu Arg Leu Ala His Gly Ser Pro Phe Arg Gly Met Ser Leu Leu
              740                   745                   750
His Leu Ala Ala Ala Gln Gly Tyr Ala Arg Leu Ile Glu Thr Leu Ser
              755                   760                   765
Gln Trp Arg Ser Val Glu Thr Gly Ser Leu Asp Leu Glu Gln Glu Val
     770                   775                   780
Asp Pro Leu Asn Val Asp His Phe Ser Cys Thr Pro Leu Met Trp Ala
785                   790                   795                   800
Cys Ala Leu Gly His Leu Glu Ala Ala Val Leu Leu Phe Arg Trp Asn
              805                   810                   815
Arg Gln Ala Leu Ser Ile Pro Asp Ser Leu Gly Arg Leu Pro Leu Ser
              820                   825                   830
Val Ala His Ser Arg Gly His Val Arg Leu Ala Arg Cys Leu Glu Glu
              835                   840                   845
Leu Gln Arg Gln Glu Pro Ser Val Glu Pro Pro Phe Ala Leu Ser Pro
     850                   855                   860
Pro Ser Ser Ser Pro Asp Thr Gly Leu Ser Ser Val Ser Ser Pro Ser
865                   870                   875                   880
Glu Leu Ser Asp Gly Thr Phe Ser Val Thr Ser Ala Tyr Ser Ser Ala
              885                   890                   895
Pro Asp Gly Ser Pro Pro Pro Ala Pro Leu Pro Ala Ser Glu Met Thr
              900                   905                   910
Met Glu Asp Met Ala Pro Gly Gln Leu Ser Ser Gly Val Pro Glu Ala
     915                   920                   925
Pro Leu Leu Leu Met Asp Tyr Glu Ala Thr Asn Ser Lys Gly Pro Leu
     930                   935                   940
Ser Ser Leu Pro Ala Leu Pro Pro Ala Ser Asp Asp Gly Ala Ala Pro
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Glu Asp Ala Asp Ser Pro Gln Ala Val Asp Val Ile Pro Val Asp Met
                965                      970                 975
Ile Ser Leu Ala Lys Gln Ile Ile Glu Ala Thr Pro Glu Arg Ile Lys
            980                 985                      990
Arg Glu Asp Phe Val Gly Leu Pro Glu Ala Gly Ala Ser Met Arg Glu
        995                 1000                    1005
Arg Thr Gly Ala Val Gly Leu Ser Glu Thr Met Ser Trp Leu Ala Ser
        1010                1015                    1020
Tyr Leu Glu Asn Val Asp His Phe Pro Ser Ser Thr Pro Pro Ser Glu
1025                1030                 1035                    1040
Leu Pro Phe Glu Arg Gly Arg Leu Ala Val Pro Ser Ala Pro Ser Trp
                1045                1050                    1055
Ala Glu Phe Leu Ser Ala Ser Thr Ser Gly Lys Met Glu Ser Asp Phe
                1060                1065                    1070
Ala Leu Leu Thr Leu Ser Asp His Glu Gln Arg Glu Leu Tyr Glu Ala
                1075                1080                    1085
Ala Arg Val Ile Gln Thr Ala Phe Arg Lys Tyr Lys Gly Arg Arg Leu
        1090                1095                    1100
Lys Glu Gln Gln Glu Val Ala Ala Ala Val Ile Gln Arg Cys Tyr Arg
1105                1110                 1115                    1120
Lys Tyr Lys Gln Leu Thr Trp Ile Ala Leu Lys Phe Ala Leu Tyr Lys
                1125                1130                    1135
Lys Met Thr Gln Ala Ala Ile Leu Ile Gln Ser Lys Phe Arg Ser Tyr
                1140                1145                    1150
Tyr Glu Gln Lys Arg Phe Gln Gln Ser Arg Arg Ala Ala Val Leu Ile
            1155                1160                    1165
Gln Gln His Tyr Arg Ser Tyr Arg Arg Arg Pro Gly Pro Pro His Arg
        1170                1175                    1180
Thr Ser Ala Thr Leu Pro Ala Arg Asn Lys Gly Ser Phe Leu Thr Lys
1185                1190                 1195                    1200
Lys Gln Asp Gln Ala Ala Arg Lys Ile Met Arg Phe Leu Arg Arg Cys
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Pro Gln Pro Gly Leu Ala Thr
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<211> 357
<212> DNA
<213> Homo sapiens


<400> 4987
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4163

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357

<210> 4988
<211> 105
<212> PRT
<213> Homo sapiens

<400> 4988
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            20   25   30
Phe Pro Leu Cys Phe Leu Gly Thr Ala Phe Pro Gln Gly Glu Gln Arg
        35   40   45
Pro Leu Glu Ala Lys Gly Leu Ala Thr Gln Gly Ala Ser Leu Pro Leu
    50   55   60
Leu Pro Thr Val Thr Cys Val Ser Ile Lys Ser Trp Lys Met Glu Cys
65   70   75   80
Pro His Gln Gly Asp Gly Val Thr Thr Glu Ala Gly Ser Glu Leu Pro
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Gln Leu Leu Gln Ala Pro Trp Pro Arg
            100   105

<210> 4989
<211> 1723
<212> DNA
<213> Homo sapiens

<400> 4989
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1723

<210> 4990
<211> 54
<212> PRT
<213> Homo sapiens

<400> 4990
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            20   25   30
Glu Gln Ala Ser Phe Leu Ala Ser Ser Phe Ser Ser Ser Ala Gly Pro
        35   40   45
Arg Thr Ser Ile Ser Gly
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<210> 4991
<211> 828
<212> DNA
<213> Homo sapiens

4165

<400> 4991
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aaggtgaagg acgacaacta caacttagcc atgcgctacg cacagctcag tgaggagaag
360
aacatggcgg tcatgaggag ccgagacctc caactcgaga tcgatcagct aaagcaccgg
420
ttgaataaga tggaggagga atgtaagctg gagagaaatc agtctctaaa actgaagaat
480
gacattgaaa atcggcccaa gaaggagcag gttctggaac tggagcggga gaatgaaatg
540
ctgaagacca aaaaccagga gctgcagtcc atcatccagg ccgggaagcg cagcctgcca
600
gactcagaca aggccatcct ggacatcttg gaacacgacc gcaaggaggc cctggaggac
660
aggcaggagc tggtcaacag gatctacaac ctgcaggagg aggcccgcca ggcagaggag
720
ctgcgagaca agtacctgga ggagaaggag gacctggagc tcaagtgctc gaccctggga
780
aaggactgtg aaatgtacaa gcaccgcatg aacacggtca tgctgcag
828

<210> 4992
<211> 69
<212> PRT
<213> Homo sapiens

<400> 4992
Asp Ile Leu Glu His Asp Arg Lys Glu Ala Leu Glu Asp Arg Gln Glu
1   5   10   15
Leu Val Asn Arg Ile Tyr Asn Leu Gln Glu Glu Ala Arg Gln Ala Glu
            20   25   30
Glu Leu Arg Asp Lys Tyr Leu Glu Glu Lys Glu Asp Leu Glu Leu Lys
        35   40   45
Cys Ser Thr Leu Gly Lys Asp Cys Glu Met Tyr Lys His Arg Met Asn
    50   55   60
Thr Val Met Leu Gln
65

<210> 4993
<211> 837
<212> DNA
<213> Homo sapiens

<400> 4993

4166

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tggaccttca ggccgccggg gcccaggcgc aggggccgc ggaccgtctc ggggcccgcc
60
gctgcctagc gcgcgggggg cgcccccagc ccggagctgg ctttgctaca gctgaccact
120
ccagtcagga gagagagact gagaaggcta tggatcgact agcccgtgga acacagagca
180
ttcctaatga cagtcctgcc cggggtgagg gcacccattc tgaagaggaa ggctttgcca
240
tggatgagga ggactctgat ggagaactga atacctggga gctgtcagaa gggacaaact
300
gtccacccaa ggaacagcct ggcgatcttt ttaatgagga ctgggactcg gagttgaaag
360
cagatcaagg gaatccatat gatgctgacg acatccagga gagcatttct caagagctta
420
aaccttgggt gtgctgtgcc ccacaaggag acatgatcta tgaccccagc tggcaccatc
480
cgcctccact gataccctat tattccaaga tggtctttga aacaggacag tttgacgatg
540
ctgaagattg agtgtggagc tttctgcctt gtaggtgggc gggcctccac gtcaagatct
600
cttttcctgt cttggaggtg aaaagtcata tctgagaaaa tgtttgcagt gaccccтagt
660
ctggggtaca cagaccagtg ttccttattg acagtgttca ataaggcccc gtcattctcg
720
ccagtctgtt gttgttctta atgggctcct ccttgaaatg tgtgtgtgtt tgtgtcaaga
780
ggagttgtgt tctttgtaaa taaaggttaa aaagagaaac caaaaaaaaa aaaaaaa
837
```

```
<210> 4994
<211> 133
<212> PRT
<213> Homo sapiens
```

```
<400> 4994
Met Asp Arg Leu Ala Arg Gly Thr Gln Ser Ile Pro Asn Asp Ser Pro
1               5                   10                  15
Ala Arg Gly Glu Gly Thr His Ser Glu Glu Gly Phe Ala Met Asp
            20                  25                  30
Glu Glu Asp Ser Asp Gly Glu Leu Asn Thr Trp Glu Leu Ser Glu Gly
            35                  40                  45
Thr Asn Cys Pro Pro Lys Glu Gln Pro Gly Asp Leu Phe Asn Glu Asp
        50                  55                  60
Trp Asp Ser Glu Leu Lys Ala Asp Gln Gly Asn Pro Tyr Asp Ala Asp
65                  70                  75                  80
Asp Ile Gln Glu Ser Ile Ser Gln Glu Leu Lys Pro Trp Val Cys Cys
                85                  90                  95
Ala Pro Gln Gly Asp Met Ile Tyr Asp Pro Ser Trp His His Pro Pro
            100                 105                 110
Pro Leu Ile Pro Tyr Tyr Ser Lys Met Val Phe Glu Thr Gly Gln Phe
            115                 120                 125
Asp Asp Ala Glu Asp
        130
```

<210> 4995
<211> 1595
<212> DNA
<213> Homo sapiens

<400> 4995
nntccggatt catggactcc agaagaagtg attcccaaga gattgcaaga gaaacagaag
60

tgaggacctt gaagaaactg catggttgga tcagtctgat gaagcacttg aggcttcctg
120

agcccaggca gatgtgaact cctggcaagg ggtgggcagg tccagtttgg gaagtcgggg
180

tggagcccag ggctggccct ggaatgcagt cctcagagcg gctgtgctca taggtcagaa
240

cgggaaacag ccgtacgcat ctcccaggag attgggaacc ttatgaagga aatcgagacc
300

cttgtggaag agaagaccaa ggagtcactg gatgtgagca gactgacccg ggaaggtggc
360

cccctgctgt atgaaggcat cagtctcacc atgaactcca aactcctgaa tggttcccag
420

cgggtggtga tggacggcgt aatctctgac cacgagtgtc aggagctgca gagactgacc
480

aatgtggcag caacctcagg agatggctac cggggtcaga cctccccaca tactcccaat
540

gaaaagttct atggtgtcac tgtcttcaaa gccctcaagc tggggcaaga aggcaaagtt
600

cctctgcaga gtgcccacct gtactacaac gtgacggaga aggtgcggcg catcatggag
660

tcctacttcc gcctggatac gcccctctac ttttcctact ctcatctggt gtgccgcact
720

gccatcgaag aggtccaggc agagaggaag gatgatagtc atccagtcca cgtggacaac
780

tgcatcctga atgccgagac cctcgtgtgt gtcaaagagc ccccagccta caccttccgc
840

gactacagcg ccatcctta cctaaatggg gacttcgatg gcggaaactt ttatttcact
900

gaactggatg ccaagaccgt gacggcagag gtgtagcctc agtgtggaag agccgtggga
960

ttctcttcag gcactgaaaa cccacatgga gtgaaggctg tcaccagggg gcagcgctgt
1020

gccatcgccc tgtggttcac cctggaccct cgacacagcg agcgggacag ggtgcaggca
1080

gatgacctgg tgaagatgct cttcagccca gaagagatgg acctctccca ggagcagccc
1140

ctggatgccc agcagggccc ccccnngaac ctgcacaaga gtctctctca ggcagtgaat
1200

cgaagcccaa ggatgagcta tgacagcgtc caggtcagac ggatgggtga ctagacccat
1260

ggagaggaac tcttctgcac tctgagctgg ccagcccctc ggggctgcag agcagtgagc
1320

ctacatctgc cactcagccg aggggaccct gctcacagcc ttctacatgg tgctactgct
1380

cttggagtgg acatgaccag acaccgcacc ccctggatct ggctgagggc tcaggacaca
1440

```
ggcccagcca cccccagggg cctccacagg ccgctgcata acagcgatac agtacttaag
1500
tgtctgtgta tacaaccaaa gaataaatga ttcatggttt tttttacttg gtttgttcag
1560
acaatggaaa tttgcccatt ctgtcaaaaa aaaaa
1595
```

```
<210> 4996
<211> 217
<212> PRT
<213> Homo sapiens
```

```
<400> 4996
Met Lys Glu Ile Glu Thr Leu Val Glu Glu Lys Thr Lys Glu Ser Leu
1               5                   10                  15
Asp Val Ser Arg Leu Thr Arg Glu Gly Gly Pro Leu Leu Tyr Glu Gly
            20                  25                  30
Ile Ser Leu Thr Met Asn Ser Lys Leu Leu Asn Gly Ser Gln Arg Val
            35                  40                  45
Val Met Asp Gly Val Ile Ser Asp His Glu Cys Gln Glu Leu Gln Arg
        50                  55                  60
Leu Thr Asn Val Ala Ala Thr Ser Gly Asp Gly Tyr Arg Gly Gln Thr
65                  70                  75                  80
Ser Pro His Thr Pro Asn Glu Lys Phe Tyr Gly Val Thr Val Phe Lys
                85                  90                  95
Ala Leu Lys Leu Gly Gln Glu Gly Lys Val Pro Leu Gln Ser Ala His
            100                 105                 110
Leu Tyr Tyr Asn Val Thr Glu Lys Val Arg Arg Ile Met Glu Ser Tyr
        115                 120                 125
Phe Arg Leu Asp Thr Pro Leu Tyr Phe Ser Tyr Ser His Leu Val Cys
    130                 135                 140
Arg Thr Ala Ile Glu Glu Val Gln Ala Glu Arg Lys Asp Asp Ser His
145                 150                 155                 160
Pro Val His Val Asp Asn Cys Ile Leu Asn Ala Glu Thr Leu Val Cys
                165                 170                 175
Val Lys Glu Pro Pro Ala Tyr Thr Phe Arg Asp Tyr Ser Ala Ile Leu
            180                 185                 190
Tyr Leu Asn Gly Asp Phe Asp Gly Gly Asn Phe Tyr Phe Thr Glu Leu
        195                 200                 205
Asp Ala Lys Thr Val Thr Ala Glu Val
    210                 215
```

```
<210> 4997
<211> 1888
<212> DNA
<213> Homo sapiens
```

```
<400> 4997
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60
cgccgcgcgg acccgggcgt tctcggcgcc cagcttttga gctcgcgtcc ccaggccggc
120
gggggggag gggaagagag gggaccctgg gacccccgcc ccccccaccc ggccgcccct
180
```

```
gccccccggg accoggagaa gatgtcttcg cggacggtgc tggccccggg caacgatcgg
240
aactcggaca cgcatggcac cttgggcagt ggccgctcct cggacaaagg cccgtcctgg
300
tccagccgct cactgggtgc ccgttgccgg aactccatcg cctcctgtcc cgaggagcag
360
ccccacgtgg gcaactaccg cctgctgagg accattggga agggcaactt tgccaaagtc
420
aagctggctc ggcacatcct cactggtcgg gaggttgcca tcaagattat cgacaaaacc
480
cagctgaatc ccagcagcct gcagaagctg ttccgagaag tccgcatcat gaagggccta
540
aaccacccca acatcgtgaa gctctttgag gtgattgaga ctgagaagac gctgtacctg
600
gtgatggagt acgcaagtgc tggtgagccg cccaccctct ccgccctgcc cctgtgccac
660
ctcccccctgc cgctgcacct gaccctgacc ccgctcggcc tctgccctgc aggagaagtg
720
tttgactacc tcgtgtcgca tggccgcatg aaggagaagg aagctcgagc caagttccga
780
cagattgttt cggctgtgca ctattgtcac cagaaaaata ttgtacacag ggacctgaag
840
gctgagaacc tcttgctgga tgccgaggcc aacatcaaga ttgctgactt tggcttcagc
900
aacgagttca cgctgggatc gaagctggac acgttctgcg ggagcccccc atatgccgcc
960
ccggagctgt ttcagggcaa gaagtacgac gggccggagg tggacatctg gagcctggga
1020
gtcatcctgt acaccctcgt cagcggctcc ctgcccttcg acgggcacaa cctcaaggag
1080
ctgcgggagc gagtactcaa agggaagtac cgggtccctt tctacatgtc aacagactgt
1140
gagagcatcc tgcggagatt tttggtgctg aacccagcta aacgctgtac tctcgagcaa
1200
atcatgaaag acaaatggat caacatcggc tatgagggtg aggagttgaa gccatacaca
1260
gagcccgagg aggacttcgg ggacaccaag agaattgagg tgatggtggg tatgggctac
1320
acacgggaag aaatcaaaga gtccttgacc agccagaagt acaacgaagt gaccgccacc
1380
tacctcctgc tgggcaggaa gactgagccc gacgagcacg ggggaggcgg agctgaagga
1440
ggagcggctg ccaggccgga aggcgagctg cagcaccgcg gggagtggga gtcgagggct
1500
gcccccctcc agccccatgg tcagcagcgc ccacaacccc aacaaggcag agatcccaga
1560
gcggcggaag gacagcacga gcacccccgt gagtgaccag ggctgggggg cagggctggg
1620
ggcgccacct gggccacatt cctcaggccc tgccttcatc tcattcccca gacggaactc
1680
cttcttacca actccttctt ctacccattc attcattcaa caaacatttta tcgagtgcct
1740
ctgtttgcct gagctcagtt tatacactaa catttgatgt tagcgtataa attagtgttc
1800
```

                                   4170

tgtgtcaaag aagtgcagaa cgtactcttg gcagaaagga tttaatacag gaaattaagt
1860
gctttttaaaa atgtgggaaa ggccaggc
1888

<210> 4998
<211> 464
<212> PRT
<213> Homo sapiens

<400> 4998
Met Ser Ser Arg Thr Val Leu Ala Pro Gly Asn Asp Arg Asn Ser Asp
 1   5   10   15
Thr His Gly Thr Leu Gly Ser Gly Arg Ser Ser Asp Lys Gly Pro Ser
                20   25   30
Trp Ser Ser Arg Ser Leu Gly Ala Arg Cys Arg Asn Ser Ile Ala Ser
            35   40   45
Cys Pro Glu Glu Gln Pro His Val Gly Asn Tyr Arg Leu Leu Arg Thr
        50   55   60
Ile Gly Lys Gly Asn Phe Ala Lys Val Lys Leu Ala Arg His Ile Leu
65   70   75   80
Thr Gly Arg Glu Val Ala Ile Lys Ile Ile Asp Lys Thr Gln Leu Asn
                85   90   95
Pro Ser Ser Leu Gln Lys Leu Phe Arg Glu Val Arg Ile Met Lys Gly
            100   105   110
Leu Asn His Pro Asn Ile Val Lys Leu Phe Glu Val Ile Glu Thr Glu
        115   120   125
Lys Thr Leu Tyr Leu Val Met Glu Tyr Ala Ser Ala Gly Glu Pro Pro
    130   135   140
Thr Leu Ser Ala Leu Pro Leu Cys His Leu Pro Leu Pro Leu His Leu
145   150   155   160
Thr Leu Thr Pro Leu Gly Leu Cys Pro Ala Gly Glu Val Phe Asp Tyr
                165   170   175
Leu Val Ser His Gly Arg Met Lys Glu Lys Glu Ala Arg Ala Lys Phe
            180   185   190
Arg Gln Ile Val Ser Ala Val His Tyr Cys His Gln Lys Asn Ile Val
        195   200   205
His Arg Asp Leu Lys Ala Glu Asn Leu Leu Leu Asp Ala Glu Ala Asn
    210   215   220
Ile Lys Ile Ala Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly Ser
225   230   235   240
Lys Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu
                245   250   255
Phe Gln Gly Lys Lys Tyr Asp Gly Pro Glu Val Asp Ile Trp Ser Leu
            260   265   270
Gly Val Ile Leu Tyr Thr Leu Val Ser Gly Ser Leu Pro Phe Asp Gly
        275   280   285
His Asn Leu Lys Glu Leu Arg Glu Arg Val Leu Lys Gly Lys Tyr Arg
    290   295   300
Val Pro Phe Tyr Met Ser Thr Asp Cys Glu Ser Ile Leu Arg Arg Phe
305   310   315   320
Leu Val Leu Asn Pro Ala Lys Arg Cys Thr Leu Glu Gln Ile Met Lys
                325   330   335
Asp Lys Trp Ile Asn Ile Gly Tyr Glu Gly Glu Glu Leu Lys Pro Tyr

4171

```
              340                 345                 350
Thr Glu Pro Glu Glu Asp Phe Gly Asp Thr Lys Arg Ile Glu Val Met
         355                 360                 365
Val Gly Met Gly Tyr Thr Arg Glu Glu Ile Lys Glu Ser Leu Thr Ser
         370                 375                 380
Gln Lys Tyr Asn Glu Val Thr Ala Thr Tyr Leu Leu Leu Gly Arg Lys
385                 390                 395                 400
Thr Glu Pro Asp Glu His Gly Gly Gly Gly Ala Glu Gly Gly Ala Ala
                 405                 410                 415
Ala Arg Pro Glu Gly Glu Leu Gln His Arg Gly Glu Trp Glu Ser Arg
         420                 425                 430
Ala Ala Pro Leu Gln Pro His Gly Gln Gln Arg Pro Gln Pro Gln Gln
         435                 440                 445
Gly Arg Asp Pro Arg Ala Ala Glu Gly Gln His Glu His Pro Arg Glu
450                 455                 460
```

<210> 4999
<211> 1630
<212> DNA
<213> Homo sapiens

<400> 4999
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gcggccgcgg ccgatggggg caccgtggac ttgcgcgaga tgctggctgt gtcagtgctg
60
gccgcagtcc gcggcggcga cgaggtgagg cgcgtccgcg agagcaacgt cctccacgag
120
aagtccaagg ggaagacgcg cgagggagcc gaggacaaga tgaccagcgg cgacgtgctg
180
tccaaccgca agatgttcta cctgctcaag accgccttcc ccagcgtcca gattaatact
240
gaggaacacg tggatgcagc tgatcaggag gttatcttgt gggatcataa gattcctgag
300
gatatcctaa aggaagtaac tactcctaaa gaggtaccag cagaaagtgt tactgtctgg
360
attgacccac ttgatgctac acaggaatat acagaggatc ttcgaaagta cgtcactact
420
atggtgtgtg tggctgtaaa tggtaaaccc atgctaggag ttatacataa gccattttcc
480
gaatatacag cttgggcaat ggtagatggt ggttcaaatg tgaaagcccg ctcttcctac
540
aatgagaaga ccccaaggat cgttgtgtct cgttcccatt cagggatggt caaacaggtc
600
gctcttcaga cttttggaaa ccagactaca attatcccag ctggtggtgc tggttataaa
660
gttttagcac ttttggatgt gcctgataag agtcaagaaa aagctgattt atacatccat
720
gtgacataca tcaaaaagtg ggatatatgt gctggtaatg ccatcttaaa agccctaggg
780
gggcatatga ctaccctgag tggtgaagaa atcagttaca ctggttcaga cggcattgaa
840
ggggggactcc ttgctagcat cagaatgaac caccaggccc tggtcagaaa actcccagat
900
ctagaaaaga caggacataa atgagcataa ctgattacag ggtacagttc ttcacagctg
960
```

4172

```
aaatggttag cctgagatgc tggaagcttc aaaggattgg tggagactat gcatggttaa
1020
ggccatcccg aactttttaa agtatttatg aagcatcaga gacttatttt ccctgtaata
1080
gaatgcaaaa tcagggaaaa tgggttgctt tgtgtctcaa gtattgtctt tattttgag
1140
actattttca tacagttgtc atacacaagg cgcatatata tatttgtgaa ttaaaatctg
1200
tagctgagtc tacattgtta tgagtcacca ttttcacaca acatcatgaa tcttcactgt
1260
tagtactttc atatagaatt cggttgaagg aaagattgat ttttgtgtag atgtttaata
1320
taactttaca actatatctc attgaaaata aagtcattgg ggatttttac ctctaatttg
1380
gatggaaagc acaagaagcc acacattcat taatatgcaa caaatgttgt atttatgtta
1440
ctgaatattt ctatggatta aaatagaaaa agtttaattg attttttctt ttaaatttta
1500
ataacaggtt caccagctgg tagaaaatag agacacatga tgatttgcat tgtaataatt
1560
tctgtgtgta tgtgtgtgtg ttgttttgtt tttataaaga aaagtgtgtt tgtacccatg
1620
agttcagcat
1630
```

```
<210> 5000
<211> 307
<212> PRT
<213> Homo sapiens
```

```
<400> 5000
Ala Ala Ala Ala Asp Gly Gly Thr Val Asp Leu Arg Glu Met Leu Ala
1               5                   10                  15
Val Ser Val Leu Ala Ala Val Arg Gly Gly Asp Glu Val Arg Arg Val
                20                  25                  30
Arg Glu Ser Asn Val Leu His Glu Lys Ser Lys Gly Lys Thr Arg Glu
            35                  40                  45
Gly Ala Glu Asp Lys Met Thr Ser Gly Asp Val Leu Ser Asn Arg Lys
        50                  55                  60
Met Phe Tyr Leu Leu Lys Thr Ala Phe Pro Ser Val Gln Ile Asn Thr
65                  70                  75                  80
Glu Glu His Val Asp Ala Ala Asp Gln Glu Val Ile Leu Trp Asp His
                85                  90                  95
Lys Ile Pro Glu Asp Ile Leu Lys Glu Val Thr Thr Pro Lys Glu Val
                100                 105                 110
Pro Ala Glu Ser Val Thr Val Trp Ile Asp Pro Leu Asp Ala Thr Gln
        115                 120                 125
Glu Tyr Thr Glu Asp Leu Arg Lys Tyr Val Thr Thr Met Val Cys Val
        130                 135                 140
Ala Val Asn Gly Lys Pro Met Leu Gly Val Ile His Lys Pro Phe Ser
145                 150                 155                 160
Glu Tyr Thr Ala Trp Ala Met Val Asp Gly Gly Ser Asn Val Lys Ala
                165                 170                 175
Arg Ser Ser Tyr Asn Glu Lys Thr Pro Arg Ile Val Val Ser Arg Ser
```

```
            180                   185                   190
His Ser Gly Met Val Lys Gln Val Ala Leu Gln Thr Phe Gly Asn Gln
        195                   200                   205
Thr Thr Ile Ile Pro Ala Gly Gly Ala Gly Tyr Lys Val Leu Ala Leu
    210                   215                   220
Leu Asp Val Pro Asp Lys Ser Gln Glu Lys Ala Asp Leu Tyr Ile His
225                   230                   235                   240
Val Thr Tyr Ile Lys Lys Trp Asp Ile Cys Ala Gly Asn Ala Ile Leu
                245                   250                   255
Lys Ala Leu Gly Gly His Met Thr Thr Leu Ser Gly Glu Glu Ile Ser
            260                   265                   270
Tyr Thr Gly Ser Asp Gly Ile Glu Gly Gly Leu Leu Ala Ser Ile Arg
        275                   280                   285
Met Asn His Gln Ala Leu Val Arg Lys Leu Pro Asp Leu Glu Lys Thr
    290                   295                   300
Gly His Lys
305
```

```
<210> 5001
<211> 3427
<212> DNA
<213> Homo sapiens

<400> 5001
tccggaccga gggacgcggt tactccacag gatccgctga acataggatg ttgccacaaa
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atctacctcg tgtatttttc tctttcactc atgagctgca caattgcaga tttgagcaca
120
atgtctgcag actgtgttga aaaactctga agaacctaat taacacagga tgacctagga
180
gtgattctaa gtctgtgtaa caagatatta ctcattagtg aatgtgtcag tcttggtact
240
gaatgctgca gataacagca agtaggttct cctttatttc tgaagtattc acttgacctt
300
ccatcagtaa gacggacttt tctaatctgt tcctggagat attaatggaa tacagtcatg
360
tccactcaag acgagaggca gatcaatact gaatatgctg tgtcattgtt ggaacagttg
420
aaactgtttt atgaacagca gttgtttact gacatagtgt taattgttga gggcactgaa
480
ttcccttgtc ataagatggt tcttgcaaca tgtagctctt atttcagggc catgtttatg
540
agtggactaa gtgaaagcaa acaaacccat gtacacctga ggaatgtcga tgctgccacc
600
ttacagataa taataactta tgcatacacg ggtaacttgg caatgaatga cagcactgta
660
gaacagcttt atgaaacagc ttgcttccta caggtagaag atgtgttaca cgttgtcga
720
gaatatttaa ttaaaaaaat aaatgcagag aattgtgtac gattgttgag ttttgctgat
780
ctcttcagtt gtgaggaatt aaaacagagt gctaaaagaa tggtggagca caagttcact
840
gctgtgtatc atcaggacgc gttcatgcag ctgttacatg acctactgat agatattctc
900
```

```
agtagtgaca atttaaatgt agaaaaggaa gaaaccgttc gagaagctgc tatgctgtgg
960
ctagagtata acacagaatc acgatcccag tatttgtctt ctgttcttag ccaaatcaga
1020
attgatgcac tttcagaagt aacacagaga gcttggtttc aaggtctgcc acccaatgat
1080
aagtcagtgg tggttcaagg tctgtataag tccatgccca agtttttcaa accaagactt
1140
gggatgacta aagaggaaat gatgatttc attgaagcat cttcagaaaa tccttgtagt
1200
ctttactctt ctgtctgtta cagcccccaa gcagaaaaag tttacaagtt atgtagccca
1260
ccagctgatt tgcataaggt tgggaccgtt gtaactcctg ataatgatat ctacatagca
1320
gggggtcaag ttcctctgna aaaacacaaa aacaaatcac agtaaaacaa gcaaacttca
1380
gactgccttc agaactgtga attgcttta ttggtttgat gcacagcaaa atacctggtt
1440
tccaaagacc ccaatgcttt ttgtccgcat aaagccatct ttggtttgct gtgaaggcta
1500
tatctatgca attggaggag atagcgtagg tggagaactt aatcggagga ccgtagaaag
1560
atacgacact gagaaagatg agtggacgat ggtaagccct ttaccttgtg cttggcaatg
1620
gagtgcagca gttgtggttc atgactgcat ttatgtgatg acactgaacc tcatgtactg
1680
ttattttcca aggtctgact catgggtaga aatggccatg agacagacta gtaggtcctt
1740
tgcttcagct gcagcttttg gtgataaaat tttctatatt ggagggttgc atattgctac
1800
caattccggc ataagactcc cctctggcac tgtagatggg tcttcagtaa ctgtggaaat
1860
ttatgatgtg aataaaaatg agtggaaaat ggcagccaac atccctgcta agaggtactc
1920
tgaccctgt gttagagctg ttgtgatctc aaattctcta tgtgtgttta tgcgagaaac
1980
ccacttaaat gagcgagcta aatacgtcac ctaccaatat gacctggaac ttgaccggtg
2040
gtctctgcgg cagcatatat ctgaacgtgt actgtgggac ttggggagag attttcgatg
2100
cactgtgggg aaactctatc catcctgcct tgaagagtct ccatggaaac caccaactta
2160
tctttttca acggatggga cagaagagtt tgaactggat ggagaaatgg ttgcactacc
2220
acctgtatag tggggaagtt cagggagtgc acgcctgagt tatgtgcttt gtcattttct
2280
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2340
taaattttat ttttatgccc tacttaatat ttgcatcagt ataatatata tcagtgagtc
2400
ttacagaaag atatgcttcc ataatatgaa atagattatt caataattga gaaactttat
2460
gtgtaatcat gagagtataa gaatctggat tatctaacat tgttagccct gtgtatgtac
2520
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4175

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agttcaaaaa gttcatttat aaaagtagtt tcctgttcct agtgtgatgt atcacaaatt
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2640
atacagtttt cagtgtaatt aattcaactg cacttaacac taatgtccgt gttggtatag
2700
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2760
agggaaagct atgactgcag gatcagtcta actatactat taggtgcatg tattctcttt
2820
tcactaactt atacttgtct atctagaata caggtcttcc agtcagctgg tcatttacca
2880
ggtgtggact taagttgctg ggcttgcagt aagaattgcc agccactcat tgtgcgggtc
2940
tgcgtggagc tttaatcaga aaaagcctcc actttctgta ttatgttaac attggctcat
3000
gcatataact atctgctgct gatgtagttc tccatcttca agatttagag tgggttaacc
3060
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3120
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3180
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3240
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3300
acaggtgctt catgacaaac attactagca tgttcaactg caccatgttc tggcactgta
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3420
aaaaaaa
3427
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<210> 5002
<211> 335
<212> PRT
<213> Homo sapiens

<400> 5002

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1               5                   10                  15
Leu Leu Glu Gln Leu Lys Leu Phe Tyr Glu Gln Gln Leu Phe Thr Asp
            20                  25                  30
Ile Val Leu Ile Val Glu Gly Thr Glu Phe Pro Cys His Lys Met Val
            35                  40                  45
Leu Ala Thr Cys Ser Ser Tyr Phe Arg Ala Met Phe Met Ser Gly Leu
        50                  55                  60
Ser Glu Ser Lys Gl· Thr His Val His Leu Arg Asn Val Asp Ala Ala
65                  70                  75                  80
Thr Leu Gln Ile Ile Ile Thr Tyr Ala Tyr Thr Gly Asn Leu Ala Met
                85                  90                  95
Asn Asp Ser Thr Val Glu Gln Leu Tyr Glu Thr Ala Cys Phe Leu Gln
            100                 105                 110
Val Glu Asp Val Leu Gln Arg Cys Arg Glu Tyr Leu Ile Lys Lys Ile
```

```
              115                    120                    125
Asn Ala Glu Asn Cys Val Arg Leu Leu Ser Phe Ala Asp Leu Phe Ser
       130                    135                    140
Cys Glu Glu Leu Lys Gln Ser Ala Lys Arg Met Val Glu His Lys Phe
145                    150                    155                    160
Thr Ala Val Tyr His Gln Asp Ala Phe Met Gln Leu Leu His Asp Leu
              165                    170                    175
Leu Ile Asp Ile Leu Ser Ser Asp Asn Leu Asn Val Glu Lys Glu Glu
              180                    185                    190
Thr Val Arg Glu Ala Ala Met Leu Trp Leu Glu Tyr Asn Thr Glu Ser
              195                    200                    205
Arg Ser Gln Tyr Leu Ser Ser Val Leu Ser Gln Ile Arg Ile Asp Ala
       210                    215                    220
Leu Ser Glu Val Thr Gln Arg Ala Trp Phe Gln Gly Leu Pro Pro Asn
225                    230                    235                    240
Asp Lys Ser Val Val Val Gln Gly Leu Tyr Lys Ser Met Pro Lys Phe
              245                    250                    255
Phe Lys Pro Arg Leu Gly Met Thr Lys Glu Glu Met Met Ile Phe Ile
              260                    265                    270
Glu Ala Ser Ser Glu Asn Pro Cys Ser Leu Tyr Ser Ser Val Cys Tyr
              275                    280                    285
Ser Pro Gln Ala Glu Lys Val Tyr Lys Leu Cys Ser Pro Pro Ala Asp
       290                    295                    300
Leu His Lys Val Gly Thr Val Val Thr Pro Asp Asn Asp Ile Tyr Ile
305                    310                    315                    320
Ala Gly Gly Gln Val Pro Leu Xaa Lys His Lys Asn Lys Ser Gln
              325                    330                    335
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<210> 5003
<211> 3729
<212> DNA
<213> Homo sapiens

<400> 5003
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120
tatccaccct gccctgctcg gcctggctgt gcaggcctct tggtaccacg tctgttcgta
180
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240
accccagccg acaagagcga gctgcaccac accctgaaga atctttccct gaagttagat
300
gacctcagca cgtgcaatga cctcatcgcc aagcatggcg ctgccctcca gcgctccctg
360
aatgagctgg acggcctcaa gatcccatct gagagtgggg agaagctgaa ggtggtgaat
420
gagcgggcca ccctcttccg catcacatcc aatgctatga tcaacgcctg cagggacttc
480
ttggaactag cagagataca cagtcggaaa tggcagcggg cactgcagta tgagcaggag
540
cagcgcgtgc acttggagga aaccattgag cagctggcga agcagcacaa cagcctcgag
600
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cgggccttcc acagtgcccc tggccggccg gccaaccccT ccaagagctt cattgaggga
660
agcctcttga ctcccaaagg agaggacagt gaggaagatg aagataccga gtactttgat
720
gccatggaag actccacatc cttcatcacc gtgatcaccg aggccaagga agacagcaga
780
aaagctgaag gtagcaccgg gacaagttcc gtggactgga gctcagcaga caatgtacta
840
gatggtgcct cgctcgtgcc caagggttca tccaaagtca agaggcgagt ccgcattccc
900
aacaagccca actacagcct taacctctgg agcatcatga gaactgcat cggccgggag
960
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1020
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1080
gagcagatgt gcctggtggc cgccttctct gtgtcctcct actccaccac agtgcaccgc
1140
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1200
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1260
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1320
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1380
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1440
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1500
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1920
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1980
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2040
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2100
ggcggatgcc tacacgccac tgtggtttga gaagaggctg gatccgctga ctggggagat
2160
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2220
```

4178

```
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2340
cccttcctat ttcctttcct attttttttt ctccccacac tttcttggga ctcccacctt
2400
ggaaggagga agggctgacc tgggttctct ccagccccca ggtgcgccgg gtcacccgtg
2460
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2520
cggctggccc gggccatggg ctgcgcaaat caccagcccc caacccaggg aggaactggc
2580
ccctcctagg gagcctcttc gactttttta gaaaaatgat ctccatttct ttccagccat
2640
gatgtttagt aaatattttt agtaccgcac ttagcagaca gctttccaag tgtgctttct
2700
tgccacaaaa gtgtcctggc aagagcccct tatttttaag acatcaggaa gccagaccgc
2760
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2820
cacacccca cctgccaagg ccccacagag cccaaaacag aaggggggctg ccccagccca
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2940
cccccatgtg gatttgaggg cagcagtccc tggcctcacc ctagccagcc tgggtggctc
3000
cctagcccca agaggccagg aagggctgga aggcagggcc tgcaggtgct ccccgccctg
3060
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3120
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3180
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3300
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3600
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3729
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<210> 5004

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<211> 642
<212> PRT
<213> Homo sapiens

<400> 5004
Ser Ser Thr Asp Asp Ser Gly Asp Asp Asp Glu Ala Thr Thr Pro Ala
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Asp Lys Ser Glu Leu His His Thr Leu Lys Asn Leu Ser Leu Lys Leu
            20                  25                  30
Asp Asp Leu Ser Thr Cys Asn Asp Leu Ile Ala Lys His Gly Ala Ala
        35                  40                  45
Leu Gln Arg Ser Leu Asn Glu Leu Asp Gly Leu Lys Ile Pro Ser Glu
    50                  55                  60
Ser Gly Glu Lys Leu Lys Val Val Asn Glu Arg Ala Thr Leu Phe Arg
65                  70                  75                  80
Ile Thr Ser Asn Ala Met Ile Asn Ala Cys Arg Asp Phe Leu Glu Leu
            85                  90                  95
Ala Glu Ile His Ser Arg Lys Trp Gln Arg Ala Leu Gln Tyr Glu Gln
            100                 105                 110
Glu Gln Arg Val His Leu Glu Glu Thr Ile Glu Gln Leu Ala Lys Gln
        115                 120                 125
His Asn Ser Leu Glu Arg Ala Phe His Ser Ala Pro Gly Arg Pro Ala
    130                 135                 140
Asn Pro Ser Lys Ser Phe Ile Glu Gly Ser Leu Leu Thr Pro Lys Gly
145                 150                 155                 160
Glu Asp Ser Glu Glu Asp Glu Asp Thr Glu Tyr Phe Asp Ala Met Glu
                165                 170                 175
Asp Ser Thr Ser Phe Ile Thr Val Ile Thr Glu Ala Lys Glu Asp Ser
            180                 185                 190
Arg Lys Ala Glu Gly Ser Thr Gly Thr Ser Ser Val Asp Trp Ser Ser
            195                 200                 205
Ala Asp Asn Val Leu Asp Gly Ala Ser Leu Val Pro Lys Gly Ser Ser
    210                 215                 220
Lys Val Lys Arg Arg Val Arg Ile Pro Asn Lys Pro Asn Tyr Ser Leu
225                 230                 235                 240
Asn Leu Trp Ser Ile Met Lys Asn Cys Ile Gly Arg Glu Leu Ser Arg
                245                 250                 255
Ile Pro Met Pro Val Asn Phe Asn Glu Pro Leu Ser Met Leu Gln Arg
            260                 265                 270
Leu Thr Glu Asp Leu Glu Tyr His His Leu Leu Asp Lys Ala Val His
        275                 280                 285
Cys Thr Ser Ser Val Glu Gln Met Cys Leu Val Ala Ala Phe Ser Val
    290                 295                 300
Ser Ser Tyr Ser Thr Thr Val His Arg Ile Ala Lys Pro Phe Asn Pro
305                 310                 315                 320
Met Leu Gly Glu Thr Phe Glu Leu Asp Arg Leu Asp Asp Met Gly Leu
                325                 330                 335
Arg Ser Leu Cys Glu Gln Val Ser His His Pro Pro Ser Ala Ala His
            340                 345                 350
Tyr Val Phe Ser Lys His Gly Trp Ser Leu Trp Gln Glu Ile Thr Ile
            355                 360                 365
Ser Ser Lys Phe Arg Gly Lys Tyr Ile Ser Ile Met Pro Leu Gly Ala
    370                 375                 380
Ile His Leu Glu Phe Gln Ala Ser Gly Asn His Tyr Val Trp Arg Lys
```

385   390   395   400
Ser Thr Ser Thr Val His Asn Ile Ile Val Gly Lys Leu Trp Ile Asp
                405   410   415
Gln Ser Gly Asp Ile Glu Ile Val Asn His Lys Thr Asn Asp Arg Cys
            420   425   430
Gln Leu Lys Phe Leu Pro Tyr Ser Tyr Phe Ser Lys Glu Ala Ala Arg
        435   440   445
Lys Val Thr Gly Val Val Ser Asp Ser Gln Gly Lys Ala His Tyr Val
    450   455   460
Leu Ser Gly Ser Trp Asp Glu Gln Met Glu Cys Ser Lys Val Met His
465   470   475   480
Ser Ser Pro Ser Ser Pro Ser Ser Asp Gly Lys Gln Lys Thr Val Tyr
            485   490   495
Gln Thr Leu Ser Ala Lys Leu Leu Trp Lys Lys Tyr Pro Leu Pro Glu
            500   505   510
Asn Ala Glu Asn Met Tyr Tyr Phe Ser Glu Leu Ala Leu Thr Leu Asn
            515   520   525
Glu His Glu Glu Gly Val Ala Pro Thr Asp Ser Arg Leu Arg Pro Asp
            530   535   540
Gln Arg Leu Met Glu Lys Gly Arg Trp Asp Glu Ala Asn Thr Glu Lys
545   550   555   560
Gln Arg Leu Glu Glu Lys Gln Arg Leu Ser Arg Arg Arg Arg Leu Glu
            565   570   575
Ala Cys Gly Pro Gly Ser Ser Cys Ser Ser Glu Glu Gly Glu Ala Gly
            580   585   590
Arg Glu Gly Arg Pro Gly Gly Glu Glu Arg Gly Ala Arg Val Gly Val
        595   600   605
Pro Gln Gly Arg Ile Pro Gly Glu Gln Ala Thr Ser Pro Pro Thr Ser
    610   615   620
Pro Leu Cys Leu Pro Ser Arg Glu Gly Gly Gly Cys Leu His Ala Thr
625   630   635   640
Val Val

<210> 5005
<211> 1120
<212> DNA
<213> Homo sapiens

<400> 5005
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120
ggtaatggcg gcggcggtgg cggcgacggt ccagacccca tcccctctgt agccggagcc
180
gagacagccg acagcgaact ccgcggcctc ggagccggcg gcagcggcga ctcccctcag
240
cctccgccgc ctcgcccgcc ggtaccccgg cgccaacccc gggagtcagg cccttgggc
300
aggggagctc ggaggctcag gatggcggat ttcgacgaaa tctatgagga agaggaggac
360
gaggagcggg ccctggagga gcagctgctc aagtactcgc cggacccggt ggtcgtccgc
420

4181

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ggctccggtc acgtcaccgt atttggactg agcaacaaat ttgaatctga attcccttct
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tcattaactg gaaaagtagc tcctgaagaa tttaaagcca gcatcaacag agttaacagt
540
tgtcttaaga agaaccttcc tgttaatgta cgttggctac tttgtggctg cctttgttgc
600
tgctgcacat taggttgcag tatgtggcca gttatttgcc tcagtaaaag aacacgaaga
660
tcgattgaga agttattaga atgggaaaac aataggttat accacaagct gtgcttgcat
720
tggagactga gcaaaaggaa atgtgaaacg aataacatga tggaatatgt catcctcata
780
gaattttac caaagacacc gattttcga ccagattagc atttacttta tttatagaga
840
ctttccaagt atgttgtctt tccaatggtg ccttgcttgg tgctctcctg gtggtgacat
900
aacattggtt ctacagaatc gtgtggtgtt ttttttgttt ttgttttttt ttttttttta
960
aataaccgca tgttctaagt gtgcattttt gtcaatcttt gcaacagtta tttcatacag
1020
atgtttaata cttaagttat tgtgctcttt tctgttatgt attctgattt tcaaggatta
1080
cttttttgta ttatcaaaaa aatacatttg aacttagcat
1120
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<210> 5006
<211> 165
<212> PRT
<213> Homo sapiens

<400> 5006
Met Ala Asp Phe Asp Glu Ile Tyr Glu Glu Glu Asp Glu Glu Arg
  1               5                  10                  15
Ala Leu Glu Glu Gln Leu Leu Lys Tyr Ser Pro Asp Pro Val Val Val
            20                  25                  30
Arg Gly Ser Gly His Val Thr Val Phe Gly Leu Ser Asn Lys Phe Glu
        35                  40                  45
Ser Glu Phe Pro Ser Ser Leu Thr Gly Lys Val Ala Pro Glu Glu Phe
    50                  55                  60
Lys Ala Ser Ile Asn Arg Val Asn Ser Cys Leu Lys Lys Asn Leu Pro
65                  70                  75                  80
Val Asn Val Arg Trp Leu Leu Cys Gly Cys Leu Cys Cys Cys Cys Thr
                85                  90                  95
Leu Gly Cys Ser Met Trp Pro Val Ile Cys Leu Ser Lys Arg Thr Arg
            100                 105                 110
Arg Ser Ile Glu Lys Leu Leu Glu Trp Glu Asn Asn Arg Leu Tyr His
        115                 120                 125
Lys Leu Cys Leu His Trp Arg Leu Ser Lys Arg Lys Cys Glu Thr Asn
        130                 135                 140
Asn Met Met Glu Tyr Val Ile Leu Ile Glu Phe Leu Pro Lys Thr Pro
145                 150                 155                 160
Ile Phe Arg Pro Asp
                165
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<210> 5007
<211> 2165
<212> DNA
<213> Homo sapiens

<400> 5007
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120
aacggagatt tatctgaggc tgccatgtgt tacatccata ttgctgccct cattgcagag
180
tatctgaaaa gaaagggcat gttctctatg ggatggccag ctgttttgag cattacacca
240
aacattaagg aagaaggagc gatgaaagag gattctggaa tgcaagatac accatacaat
300
gagaatatcc tggtggagca gctatacatg tgtgtggagt ttctctggaa gtctgagcga
360
tatgaannct cattgctgat gtcaacaagc ccatcattgc tgtctttgag aaacaacgag
420
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540
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600
tccgagattt cccaaagatt actcaagctc tatgcagata aatttggagc agacaatgtg
660
aagataatcc aggattccaa caaggtaaac cccaaggatt tggaccccaa atatgcctac
720
atccaggtga cctatgtgac gccgttcttt gaggaaaagg aaatcgaaga ccggaagaca
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960
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1020
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1140
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1200
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1260
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1320
gagcagctct gtcgaggtcc gtgtttatac agcttctgtt cctctgtgtc tagtatttcc
1380
ctcagtactg taagcaaaag tgattacggg caggacgac ctgtcaaagc gcggagtgga
1440

ccaaacctgc actcgagtaa ttagcaaagc aactccggcc ctacccacgg tctccatctc
1500
atctagtgct gaagtctgag ggctctgcag catcagaccc acctctaaga gaactttctg
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1620
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1680
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1740
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1800
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1860
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1920
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1980
accattatat taaaatattt gtgtatgtgt acaaaagcgt tgataaatac taatctttaa
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2160
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2165

<210> 5008
<211> 487
<212> PRT
<213> Homo sapiens

<400> 5008
Leu Asn Ser Ala Arg Lys Ser Ser Phe Phe Arg Ile Pro Val Gln Pro
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Gly Asn Ser Tyr Ala Ser Thr Pro Glu Leu Arg Arg Thr Arg Leu Glu
                20   25   30
Ser Met Ala Lys Ile His Ala Arg Asn Gly Asp Leu Ser Glu Ala Ala
            35   40   45
Met Cys Tyr Ile His Ile Ala Ala Leu Ile Ala Glu Tyr Leu Lys Arg
        50   55   60
Lys Gly Met Phe Ser Met Gly Trp Pro Ala Val Leu Ser Ile Thr Pro
65   70   75   80
Asn Ile Lys Glu Glu Gly Ala Met Lys Glu Asp Ser Gly Met Gln Asp
                85   90   95
Thr Pro Tyr Asn Glu Asn Ile Leu Val Glu Gln Leu Tyr Met Cys Val
                100   105   110
Glu Phe Leu Trp Lys Ser Glu Arg Tyr Glu Xaa Ser Leu Leu Met Ser
            115   120   125
Thr Ser Pro Ser Leu Leu Ser Leu Arg Asn Asn Glu Thr Ser Lys Asn
        130   135   140
Ser Asp Leu Tyr Tyr Asp Ile His Arg Ser Tyr Leu Lys Val Ala Glu
145   150   155   160
Val Val Asn Ser Glu Ala Ala Val Trp Ser Leu Leu Ser Cys Gly Ile

4184

```
                    165                 170                  175
Tyr Gly Gln Gly Phe Phe Glu Glu Glu Gly Lys Glu Tyr Ile Tyr
            180                 185                 190
Lys Glu Pro Lys Leu Thr Gly Leu Ser Glu Ile Ser Gln Arg Leu Leu
        195                 200                 205
Lys Leu Tyr Ala Asp Lys Phe Gly Ala Asp Asn Val Lys Ile Ile Gln
    210                 215                 220
Asp Ser Asn Lys Val Asn Pro Lys Asp Leu Asp Pro Lys Tyr Ala Tyr
225                 230                 235                 240
Ile Gln Val Thr Tyr Val Thr Pro Phe Phe Glu Glu Lys Glu Ile Glu
                245                 250                 255
Asp Arg Lys Thr Asp Phe Glu Met His His Asn Ile Asn Arg Phe Val
            260                 265                 270
Phe Glu Thr Pro Phe Thr Leu Ser Gly Lys Lys His Gly Gly Val Ala
        275                 280                 285
Glu Gln Cys Lys Arg Arg Thr Ile Leu Thr Thr Ser His Leu Phe Pro
        290                 295                 300
Tyr Val Lys Lys Arg Ile Gln Val Ile Ser Gln Ser Ser Thr Glu Leu
305                 310                 315                 320
Asn Pro Ile Glu Val Ala Ile Asp Glu Met Ser Lys Lys Val Ser Glu
                325                 330                 335
Leu Asn Gln Leu Cys Thr Met Glu Glu Val Asp Met Ile Arg Leu Gln
            340                 345                 350
Leu Lys Leu Gln Gly Ser Val Ser Val Lys Val Asn Ala Gly Pro Met
        355                 360                 365
Ala Tyr Ala Arg Ala Phe Leu Glu Glu Thr Asn Ala Lys Lys Tyr Pro
    370                 375                 380
Asp Asn Gln Val Lys Leu Leu Lys Glu Ile Phe Arg Gln Phe Ala Asp
385                 390                 395                 400
Ala Cys Gly Gln Ala Leu Asp Val Asn Glu Arg Leu Ile Lys Glu Asp
                405                 410                 415
Gln Leu Glu Tyr Gln Glu Glu Leu Arg Ser His Tyr Lys Asp Met Leu
            420                 425                 430
Ser Glu Leu Ser Thr Val Met Asn Glu Gln Leu Cys Arg Gly Pro Cys
        435                 440                 445
Leu Tyr Ser Phe Cys Ser Ser Val Ser Ser Ile Ser Leu Ser Thr Val
    450                 455                 460
Ser Lys Ser Asp Tyr Gly Gln Gly Arg Pro Val Lys Ala Arg Ser Gly
465                 470                 475                 480
Pro Asn Leu His Ser Ser Asn
            485
```

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<210> 5009
<211> 426
<212> DNA
<213> Homo sapiens

<400> 5009
acgcgtgaag tgtttgtggc agtgctgggc acatgttaag tactcaataa ggtttaggca
60
ttattactgc cccctgtgaa ggtctggggc aggatatgaa agggcctgtg ctctccttcc
120
ccttggagat gtcagcaaag catggcgagg agagcagctt ctcctctgtc ccaaagggaa
180
```

```
gcagaagatt aggagctaga tcaagcaaga ctgggggctg caggtgtagg aagtgaatca
240
agatgacttc aaaagagaga ataaaaagtg ggcttatgaa gaattggtgg actcttcctg
300
gcaaattggg caagaaaagc agagatggtg acaggaagaa aaagcaagca tagctgtcca
360
ctggctggtt aagagcagct ctcaaaggtc gccagacaag catcccgtct tatgattcca
420
aagcat
426
```

<210> 5010
<211> 119
<212> PRT
<213> Homo sapiens

<400> 5010

```
Met Leu Val Trp Arg Pro Leu Arg Ala Ala Leu Asn Gln Pro Val Asp
1               5                   10                  15
Ser Tyr Ala Cys Phe Phe Phe Leu Ser Pro Ser Leu Leu Phe Leu Pro
            20                  25                  30
Asn Leu Pro Gly Arg Val His Gln Phe Phe Ile Ser Pro Leu Phe Ile
        35                  40                  45
Leu Ser Phe Glu Val Ile Leu Ile His Phe Leu His Leu Gln Pro Pro
    50                  55                  60
Val Leu Leu Asp Leu Ala Pro Asn Leu Leu Leu Pro Phe Gly Thr Glu
65                  70                  75                  80
Glu Lys Leu Leu Ser Ser Pro Cys Phe Ala Asp Ile Ser Lys Gly Lys
                85                  90                  95
Glu Ser Thr Gly Pro Phe Ile Ser Cys Pro Arg Pro Ser Gln Gly Ala
            100                 105                 110
Val Ile Met Pro Lys Pro Tyr
        115
```

<210> 5011
<211> 3431
<212> DNA
<213> Homo sapiens

<400> 5011

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nccgcatgct cccgtatctt tggttacgct cgtcagccgg tcggccgccg cctccagccg
60
tgtgccgcta tgggagtccc ggcgttcttc cgctggctca gccgcaagta cccgtccatc
120
atagtcaact gcgtggaaga gaagccaaaa gaatgcaatg gtgtaaagat tccagttgat
180
gccagtaaac ctaatccaaa tgatgtggag tttgataatc tgtatttgga tatgaatgga
240
atcatccatc cctgtactca tcctgaagac aaaccagcac caaaaaatga agatgaaatg
300
atggttgcaa tttttgagta cattgacaga cttttcagta ttgtaagacc aagaagactt
360
ctctacatgg caatagatgg agtggcacca cgtgtaaaaa tgaaccagca gcgttcaagg
420
```

```
aggttcaggg ccatcaaaga aggaatggaa gcagcagtcg agaagcagcg agtcagggaa
480
gaaatattgg caaaaggtgg ctttcttcct ccagaagaaa taaaagaaag atttgacagc
540
aactgtatta caccaggaac tgaattcatg gacaatcttg ctaaatgcct tcgctattac
600
atagctgatc gtttaaataa tgaccctggg tggaaaaatt tgacagttat tttatctgat
660
gctagtgctc ctggtgaagg agaacataaa atcatggatt acattagaag gcaaagagcc
720
cagcctaacc atgacccaaa tactcatcat tgtttatgtg gagcagatgc tgatctcatt
780
atgcttggcc ttgccacaca tgaaccgaac tttaccatta ttagagaaga attcaaacca
840
aacaagccca aaccatgtgg tctttgtaat cagtttggac atgaggtcaa agattgtgaa
900
ggtttgccaa gagaaaagaa gggaaagcat gatgaacttg ccgatagtct tccttgtgca
960
gaaggagagt ttatcttcct tcggcttaat gttcttcgtg agtatttgga aagagaactc
1020
acaatggcca gcctaccatt cacatttgat gttgagagga gcattgatga ctgggttttc
1080
atgtgcttct ttgtgggaaa tgacttcctc cctcatttgc catcgttaga gattagggaa
1140
aatgcaattg accgtttggt taacatatac aaaaatgtgg tacacaaaac tgggggttac
1200
cttacagaaa gtggttatgt caatctgcaa agagtacaga tgatcatgtt agcagttggt
1260
gaagttgagg atagcatttt taaaaagaga aaggatgatg aggacagttt tagaagacga
1320
cagaaagaaa aagaaagag aatgaagaga gatcaaccag ctttcactcc tagtggaata
1380
ttaactcctc atgccttggg ttcaagaaat tcaccaggtt ctcaagtagc cagtaatccg
1440
agacaagcag cctatgaaat gaggatgcag ataactcta gtccttcgat atctcctaat
1500
acgagtttca catctgatgg ctccccgtct ccattaggag gaattaagcg aaaagcagaa
1560
gacagtgaca gtgaacctga gccagaggat aatgtcaggt tatgggaagc tggctggaag
1620
cagcggtact acaagaacaa atttgatgtg gatgcagctg atgagaaatt ccgtcggaaa
1680
gttgtgcagt cgtacgttga aggactttgc tgggttctta gatattatta ccagggctgt
1740
gcttcctgga agtggtatta tccatttcat tatgcaccat ttgcttcaga ctttgaaggc
1800
attgcagaca tgccatctga ttttgagaag ggtacgaaac cgtttaaacc actagaacaa
1860
cttatggggg tatttccagc tgcaagtggt aattttctac tccatcatg gcggaagctc
1920
atgagtgatc ctgattctag tataattgac ttctatcctg aagattttgc tattgatttg
1980
aatgggaaga aatatgcatg gcaaggtgtt gctctcttgc cattcgtgga tgagcgaagg
2040
```

```
ctacgagctg ccctagaaga ggtataccca gacctcactc cagaagagac cagaagaaac
2100
agccttggag gtgatgtctt atttgtgggg aaacatcacc cactccatga cttcatttta
2160
gagctgtacc agacaggttc cacagagcca gtggaggtac cccctgaact atgtcatggg
2220
attcaaggaa agttttcttt ggatgaagaa gccattcttc cagatcaaat agtatgttct
2280
cctgttccta tgttaaggga tctgacacag aacactgtag tcagtattaa ttttaaagac
2340
ccacagtttg ctgaagatta catttttaaa gctgtaatgc ttccaggagc aagaaagcca
2400
gcagcagtac tgaaacctag tgactgggaa aaatccagca atggacggca gtggaagcct
2460
cagcttggct ttaaccgtga ccggaggcct gtgcacctgg atcaggcagc cttcaggact
2520
ttgggccatg tgatgccaag aggctcagga actggcattt acagcaatgc tgcaccacca
2580
cctgtgactt accagggaaa cttatacagg ccgcttttga gaggacaagc ccagattcca
2640
aaacttatgt caaatatgag gccccaggat tcctggcgag gtcctcctcc ccttttccag
2700
cagcaaaggt ttgacagagg cgttggggct gaacctctgc tcccatggaa ccggatgctg
2760
caaacccaga atgcagcctt ccagccaaac cagtaccaga tgctagctgg gcctggtggg
2820
tatccaccca gacgagatga tcgtggaggg agacagggat atcccagaga aggaaggaaa
2880
taccctttgc caccaccctc aggaagatac aattggaatt aagcttttgt aaagctttcc
2940
caaatccttt catcattcta cagttttatg ctatttgtgg aaagatttct ttctcaagta
3000
gtagttttta ataaaactac agtactttgt gtatttcttt taactgtgta tatttctact
3060
gatctgatct cactgtttat gttgctttcc aaagatgtat gttgcataat acagtggatc
3120
tgaatttatt attgcttata aaacacattt gatggaatag gagtactggt ttttcataat
3180
ggttaaaaat gaaaccagct gtggatttca aaacacagtg tattctagat catctaagat
3240
ccatgctgat ttttattgca caagaattag gtttgaactc ttgagctgga acctcagcaa
3300
actagagtat atattgttca gtatttcttt ggaaacattt cattaatgta cttgtcttac
3360
agaaatttct gaactttagt aaaaaaaaat aaagttaaac ttttaaaact caaaaaaaaa
3420
aaaaaaaaaa a
3431
```

```
<210> 5012
<211> 950
<212> PRT
<213> Homo sapiens
```

```
<400> 5012
Met Gly Val Pro Ala Phe Phe Arg Trp Leu Ser Arg Lys Tyr Pro Ser
1               5               10              15
Ile Ile Val Asn Cys Val Glu Glu Lys Pro Lys Glu Cys Asn Gly Val
            20              25              30
Lys Ile Pro Val Asp Ala Ser Lys Pro Asn Pro Asn Asp Val Glu Phe
        35              40              45
Asp Asn Leu Tyr Leu Asp Met Asn Gly Ile Ile His Pro Cys Thr His
    50              55              60
Pro Glu Asp Lys Pro Ala Pro Lys Asn Glu Asp Glu Met Met Val Ala
65              70              75              80
Ile Phe Glu Tyr Ile Asp Arg Leu Phe Ser Ile Val Arg Pro Arg Arg
            85              90              95
Leu Leu Tyr Met Ala Ile Asp Gly Val Ala Pro Arg Val Lys Met Asn
            100             105             110
Gln Gln Arg Ser Arg Arg Phe Arg Ala Ile Lys Glu Gly Met Glu Ala
        115             120             125
Ala Val Glu Lys Gln Arg Val Arg Glu Glu Ile Leu Ala Lys Gly Gly
    130             135             140
Phe Leu Pro Pro Glu Glu Ile Lys Glu Arg Phe Asp Ser Asn Cys Ile
145             150             155             160
Thr Pro Gly Thr Glu Phe Met Asp Asn Leu Ala Lys Cys Leu Arg Tyr
            165             170             175
Tyr Ile Ala Asp Arg Leu Asn Asn Asp Pro Gly Trp Lys Asn Leu Thr
            180             185             190
Val Ile Leu Ser Asp Ala Ser Ala Pro Gly Glu Gly Glu His Lys Ile
            195             200             205
Met Asp Tyr Ile Arg Arg Gln Arg Ala Gln Pro Asn His Asp Pro Asn
    210             215             220
Thr His His Cys Leu Cys Gly Ala Asp Ala Asp Leu Ile Met Leu Gly
225             230             235             240
Leu Ala Thr His Glu Pro Asn Phe Thr Ile Ile Arg Glu Glu Phe Lys
            245             250             255
Pro Asn Lys Pro Lys Pro Cys Gly Leu Cys Asn Gln Phe Gly His Glu
            260             265             270
Val Lys Asp Cys Glu Gly Leu Pro Arg Glu Lys Lys Gly Lys His Asp
    275                 280             285
Glu Leu Ala Asp Ser Leu Pro Cys Ala Glu Gly Glu Phe Ile Phe Leu
    290             295             300
Arg Leu Asn Val Leu Arg Glu Tyr Leu Glu Arg Glu Leu Thr Met Ala
305             310             315             320
Ser Leu Pro Phe Thr Phe Asp Val Glu Arg Ser Ile Asp Asp Trp Val
            325             330             335
Phe Met Cys Phe Phe Val Gly Asn Asp Phe Leu Pro His Leu Pro Ser
            340             345             350
Leu Glu Ile Arg Glu Asn Ala Ile Asp Arg Leu Val Asn Ile Tyr Lys
        355             360             365
Asn Val Val His Lys Thr Gly Gly Tyr Leu Thr Glu Ser Gly Tyr Val
    370             375             380
Asn Leu Gln Arg Val Gln Met Ile Met Leu Ala Val Gly Glu Val Glu
385             390             395             400
Asp Ser Ile Phe Lys Lys Arg Lys Asp Asp Glu Asp Ser Phe Arg Arg
            405             410             415
Arg Gln Lys Glu Lys Arg Lys Arg Met Lys Arg Asp Gln Pro Ala Phe
```

```
                420                    425                    430
Thr Pro Ser Gly Ile Leu Thr Pro His Ala Leu Gly Ser Arg Asn Ser
        435                    440                    445
Pro Gly Ser Gln Val Ala Ser Asn Pro Arg Gln Ala Ala Tyr Glu Met
        450                    455                    460
Arg Met Gln Asn Asn Ser Ser Pro Ser Ile Ser Pro Asn Thr Ser Phe
465                    470                    475                    480
Thr Ser Asp Gly Ser Pro Ser Pro Leu Gly Gly Ile Lys Arg Lys Ala
                485                    490                    495
Glu Asp Ser Asp Ser Glu Pro Glu Pro Glu Asp Asn Val Arg Leu Trp
                500                    505                    510
Glu Ala Gly Trp Lys Gln Arg Tyr Tyr Lys Asn Lys Phe Asp Val Asp
        515                    520                    525
Ala Ala Asp Glu Lys Phe Arg Arg Lys Val Val Gln Ser Tyr Val Glu
    530                    535                    540
Gly Leu Cys Trp Val Leu Arg Tyr Tyr Tyr Gln Gly Cys Ala Ser Trp
545                    550                    555                    560
Lys Trp Tyr Tyr Pro Phe His Tyr Ala Pro Phe Ala Ser Asp Phe Glu
                565                    570                    575
Gly Ile Ala Asp Met Pro Ser Asp Phe Glu Lys Gly Thr Lys Pro Phe
                580                    585                    590
Lys Pro Leu Glu Gln Leu Met Gly Val Phe Pro Ala Ala Ser Gly Asn
        595                    600                    605
Phe Leu Pro Pro Ser Trp Arg Lys Leu Met Ser Asp Pro Asp Ser Ser
        610                    615                    620
Ile Ile Asp Phe Tyr Pro Glu Asp Phe Ala Ile Asp Leu Asn Gly Lys
625                    630                    635                    640
Lys Tyr Ala Trp Gln Gly Val Ala Leu Leu Pro Phe Val Asp Glu Arg
                645                    650                    655
Arg Leu Arg Ala Ala Leu Glu Glu Val Tyr Pro Asp Leu Thr Pro Glu
        660                    665                    670
Glu Thr Arg Arg Asn Ser Leu Gly Gly Asp Val Leu Phe Val Gly Lys
        675                    680                    685
His His Pro Leu His Asp Phe Ile Leu Glu Leu Tyr Gln Thr Gly Ser
    690                    695                    700
Thr Glu Pro Val Glu Val Pro Pro Glu Leu Cys His Gly Ile Gln Gly
705                    710                    715                    720
Lys Phe Ser Leu Asp Glu Glu Ala Ile Leu Pro Asp Gln Ile Val Cys
                725                    730                    735
Ser Pro Val Pro Met Leu Arg Asp Leu Thr Gln Asn Thr Val Val Ser
                740                    745                    750
Ile Asn Phe Lys Asp Pro Gln Phe Ala Glu Asp Tyr Ile Phe Lys Ala
        755                    760                    765
Val Met Leu Pro Gly Ala Arg Lys Pro Ala Ala Val Leu Lys Pro Ser
        770                    775                    780
Asp Trp Glu Lys Ser Ser Asn Gly Arg Gln Trp Lys Pro Gln Leu Gly
785                    790                    795                    800
Phe Asn Arg Asp Arg Arg Pro Val His Leu Asp Gln Ala Ala Phe Arg
                805                    810                    815
Thr Leu Gly His Val Met Pro Arg Gly Ser Gly Thr Gly Ile Tyr Ser
        820                    825                    830
Asn Ala Ala Pro Pro Pro Val Thr Tyr Gln Gly Asn Leu Tyr Arg Pro
        835                    840                    845
Leu Leu Arg Gly Gln Ala Gln Ile Pro Lys Leu Met Ser Asn Met Arg
```

```
      850                    855                    860
Pro Gln Asp Ser Trp Arg Gly Pro Pro Pro Leu Phe Gln Gln Gln Arg
865                    870                    875                    880
Phe Asp Arg Gly Val Gly Ala Glu Pro Leu Leu Pro Trp Asn Arg Met
                    885                    890                    895
Leu Gln Thr Gln Asn Ala Ala Phe Gln Pro Asn Gln Tyr Gln Met Leu
                    900                    905                    910
Ala Gly Pro Gly Gly Tyr Pro Pro Arg Arg Asp Asp Arg Gly Gly Arg
                    915                    920                    925
Gln Gly Tyr Pro Arg Glu Gly Arg Lys Tyr Pro Leu Pro Pro Pro Ser
                    930                    935                    940
Gly Arg Tyr Asn Trp Asn
945                    950
```

<210> 5013
<211> 2480
<212> DNA
<213> Homo sapiens

<400> 5013

```
nccggggcgg agctcgcgat agcgaccggg agcagggcgc ggggcgggac ccaggtccga
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ggcgaggaag ccggaagcca ggcgcgggga gcctccccct tcgactgcag cctcgctccg
120
tgccttctgc gcgcctggga tcccggagcc tgcctaggtt ctgtgcgctc ccgcccaggc
180
cggtgcccgc cgcccgcctg cgccccaggc aggtcccagg cctccggctg ctcccggccg
240
aaggtgggga caggcagtgg caggcaccac tagcgagggc gtttgggaac ccagggtgac
300
cacggcgcag ccatggggac cgcgcttgtg taccatgagg acatgacggc cacccggctg
360
ctctgggacg accccgagtg cgagatcgag cgtcctgagc gcctgaccgc agccctggat
420
cgcctgcggc agcgcggcct ggaacagagg tgtctgcggt tgtcagcccg cgaggcctcg
480
gaagaggagc tgggcctggt gcacagccca gagtatgtat ccctggtcag ggagacccag
540
gtcctaggca aggaggagct gcaggcgctg tccggacagt tcgacgccat ctacttccac
600
ccgagtacct ttcactgcgc gcggctggcc gcaggggctg gactgcagct ggtggacgct
660
gtgctcactg gagctgtgca aaatgggctt gccctggtga ggcctcccgg gcaccatggc
720
cagagggcgg ctgccaacgg gttctgtgtg ttcaacaacg tggccatagc agctgcacat
780
gccaagcaga aacacgggct acacaggatc ctcgtcgtgg actgggatgt gcaccatggc
840
cagggggatcc agtatctctt tgaggatgac cccagcgtcc tttacttctc ctggcaccgc
900
tatgagcatg gcgcttctg gcctttcctg cgagagtcag atgcagacgc agtggggcgg
960
ggacagggcc tcggcttcac tgtcaacctg ccctggaacc aggttgggat gggaaacgct
1020
```

gactacgtgg ctgccttcct gcacctgctg ctcccactgg cctttgagtt tgaccctgag
1080
ctggtgctgg tctcggcagg atttgactca gccatcgggg accctgaggg gcaaatgcag
1140
gccacgccag agtgcttcgc ccacctcaca cagctgctgc aggtgctggc cggcggccgg
1200
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1260
acagtacaga cgctgctggg tgacccggcc ccacccctgt cagggccaat ggcgccatgt
1320
cagaggtgcg aggggagtgc cctagagtcc atccagagtg cccgtgctgc ccaggccccg
1380
cactggaaga gcctccagca gcaagatgtg accgctgtgc cgatgagccc cagcagccac
1440
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1500
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1560
gctgttgccc tgacaacgcc ggatatcaca ttggttctgc cccctgacgt catccaacag
1620
gaagcgtcag ccctgaggga ggagacagaa gcctgggcca ggccacacga gtccctggcc
1680
cgggaggagg ccctcactgc acttgggaag ctcctgtacc tcttagatgg gatgctggat
1740
gggcaggtga acagtggtat agcagccact ccagcctctg ctgcagcagc caccctggat
1800
gtggctgttc ggagaggcct gtcccacgga gcccagaggc tgctgtgcgt ggccctggga
1860
cagctggacc ggcctccaga cctcgcccat gacgggagga gtctgtggct gaacatcagg
1920
ggcaaggagg cggctgccct atccatgttc catgtctcca cgccactgcc agtgatgacc
1980
ggtggtttcc tgagctgcat cttgggcttg gtgctgcccc tggcctatgg cttccagcct
2040
gacctggtgc tggtggcgct ggggcctggc catggcctgc agggccccca cgctgcactc
2100
ctggctgcaa tgcttcgggg gctggcaggg ggccgagtcc tggccctcct ggaggaggta
2160
agctgggcag ggtggaggtg ctgcggggtg ggacgagggg aaggaccagt gactgcttcc
2220
gtcttcgccc ctggtccaga actccacacc ccagctagca gggatcctgg cccgggtgct
2280
gaatggagag gcacctccta gcctaggccc ttcctctgtg gcctccccag aggacgtcca
2340
ggccctgatg tacctgagag ggcagctgga gcctcagtgg aagatgttgc agtgccatcc
2400
tcacctggtg gcttgaaatc ggccaaggtg ggagcattta caccgcagaa atgacaccgc
2460
acgccagcgc cccgcggccg
2480

<210> 5014
<211> 675
<212> PRT

4192

<213> Homo sapiens

<400> 5014

```
Arg Gly Arg Leu Gly Thr Gln Gly Asp His Gly Ala Ala Met Gly Thr
1               5                   10              15
Ala Leu Val Tyr His Glu Asp Met Thr Ala Thr Arg Leu Leu Trp Asp
            20                  25                  30
Asp Pro Glu Cys Glu Ile Glu Arg Pro Glu Arg Leu Thr Ala Ala Leu
        35                  40                  45
Asp Arg Leu Arg Gln Arg Gly Leu Glu Gln Arg Cys Leu Arg Leu Ser
    50                  55                  60
Ala Arg Glu Ala Ser Glu Glu Glu Leu Gly Leu Val His Ser Pro Glu
65                  70                  75                  80
Tyr Val Ser Leu Val Arg Glu Thr Gln Val Leu Gly Lys Glu Glu Leu
                85                  90                  95
Gln Ala Leu Ser Gly Gln Phe Asp Ala Ile Tyr Phe His Pro Ser Thr
            100                 105                 110
Phe His Cys Ala Arg Leu Ala Ala Gly Ala Gly Leu Gln Leu Val Asp
        115                 120                 125
Ala Val Leu Thr Gly Ala Val Gln Asn Gly Leu Ala Leu Val Arg Pro
    130                 135                 140
Pro Gly His His Gly Gln Arg Ala Ala Ala Asn Gly Phe Cys Val Phe
145                 150                 155                 160
Asn Asn Val Ala Ile Ala Ala Ala His Ala Lys Gln Lys His Gly Leu
                165                 170                 175
His Arg Ile Leu Val Val Asp Trp Asp Val His His Gly Gln Gly Ile
            180                 185                 190
Gln Tyr Leu Phe Glu Asp Asp Pro Ser Val Leu Tyr Phe Ser Trp His
            195                 200                 205
Arg Tyr Glu His Gly Arg Phe Trp Pro Phe Leu Arg Glu Ser Asp Ala
    210                 215                 220
Asp Ala Val Gly Arg Gly Gln Gly Leu Gly Phe Thr Val Asn Leu Pro
225                 230                 235                 240
Trp Asn Gln Val Gly Met Gly Asn Ala Asp Tyr Val Ala Ala Phe Leu
                245                 250                 255
His Leu Leu Leu Pro Leu Ala Phe Glu Phe Asp Pro Glu Leu Val Leu
            260                 265                 270
Val Ser Ala Gly Phe Asp Ser Ala Ile Gly Asp Pro Glu Gly Gln Met
            275                 280                 285
Gln Ala Thr Pro Glu Cys Phe Ala His Leu Thr Gln Leu Leu Gln Val
    290                 295                 300
Leu Ala Gly Gly Arg Val Cys Ala Val Leu Glu Gly Gly Tyr His Leu
305                 310                 315                 320
Glu Ser Leu Ala Glu Ser Val Cys Met Thr Val Gln Thr Leu Leu Gly
                325                 330                 335
Asp Pro Ala Pro Pro Leu Ser Gly Pro Met Ala Pro Cys Gln Arg Cys
            340                 345                 350
Glu Gly Ser Ala Leu Glu Ser Ile Gln Ser Ala Arg Ala Ala Gln Ala
            355                 360                 365
Pro His Trp Lys Ser Leu Gln Gln Gln Asp Val Thr Ala Val Pro Met
    370                 375                 380
Ser Pro Ser Ser His Ser Pro Glu Gly Arg Pro Pro Pro Leu Leu Pro
385                 390                 395                 400
Gly Gly Pro Val Cys Lys Ala Ala Ala Ser Ala Pro Ser Ser Leu Leu
```

```
                    405                    410                    415
Asp Gln Pro Cys Leu Cys Pro Ala Pro Ser Val Arg Thr Ala Val Ala
            420                    425                    430
Leu Thr Thr Pro Asp Ile Thr Leu Val Leu Pro Pro Asp Val Ile Gln
            435                    440                    445
Gln Glu Ala Ser Ala Leu Arg Glu Glu Thr Glu Ala Trp Ala Arg Pro
        450                    455                    460
His Glu Ser Leu Ala Arg Glu Glu Ala Leu Thr Ala Leu Gly Lys Leu
465                    470                    475                    480
Leu Tyr Leu Leu Asp Gly Met Leu Asp Gly Gln Val Asn Ser Gly Ile
            485                    490                    495
Ala Ala Thr Pro Ala Ser Ala Ala Ala Ala Thr Leu Asp Val Ala Val
            500                    505                    510
Arg Arg Gly Leu Ser His Gly Ala Gln Arg Leu Leu Cys Val Ala Leu
        515                    520                    525
Gly Gln Leu Asp Arg Pro Pro Asp Leu Ala His Asp Gly Arg Ser Leu
        530                    535                    540
Trp Leu Asn Ile Arg Gly Lys Glu Ala Ala Ala Leu Ser Met Phe His
545                    550                    555                    560
Val Ser Thr Pro Leu Pro Val Met Thr Gly Gly Phe Leu Ser Cys Ile
            565                    570                    575
Leu Gly Leu Val Leu Pro Leu Ala Tyr Gly Phe Gln Pro Asp Leu Val
        580                    585                    590
Leu Val Ala Leu Gly Pro Gly His Gly Leu Gln Gly Pro His Ala Ala
        595                    600                    605
Leu Leu Ala Ala Met Leu Arg Gly Leu Ala Gly Gly Arg Val Leu Ala
        610                    615                    620
Leu Leu Glu Glu Val Ser Trp Ala Gly Trp Arg Cys Cys Gly Val Gly
625                    630                    635                    640
Arg Gly Glu Gly Pro Val Thr Ala Ser Val Phe Ala Pro Gly Pro Glu
            645                    650                    655
Leu His Thr Pro Ala Ser Arg Asp Pro Gly Pro Gly Ala Glu Trp Arg
            660                    665                    670
Gly Thr Ser
        675
```

```
<210> 5015
<211> 1360
<212> DNA
<213> Homo sapiens

<400> 5015
atgagcgcgc cctggaggcg agccaggccc gtcaccacct cccagcggcc ccgcccctcc
60
ccgcaggtcc ctcccctctc cgcaggcccc gccgccgccg ccatctttgt tgggggcagc
120
caggcctggc tcgagatgcc gaagtcgtgc gcggcccggc agtgctgcaa ccgctacagc
180
agccgcagga agcagctcac cttccaccgg tttccgttca gccgcccgga gctgctgaag
240
gaatgggtgc tgaacatcgg ccggggcaac ttcaagccca agcagcacac ggtcatctgc
300
tccgagcact tccggccaga gtgcttcagc gcctttggaa accgcaagaa cctaaagcac
360
```

```
aatgccgtgc ccacggtgtt cgcctttcag gaccccacac agcaggtgag ggagaacaca
420
gaccctgcca gtgagagagg aaatgccagc tcttctcaga aagaaaggt cctccctgag
480
gcggggggccg gagaggacag tcctgggaga aacatggaca ctgcacttga gagcttcag
540
ttgcccccaa atgccgaagg ccacgtaaaa caggtctcgc cacggaggcc gcaagcaaca
600
gaggctgttg gccggccgac tggccctgca ggcctgagaa ggacccccaa caagcagcca
660
tctgatcaca gctatgccct tttggactta gattccctga agaaaaaact cttcctcact
720
ctgaaggaaa atgaaaagct ccggaagcgc ttgcaggccc agaggctggt gatgcgaagg
780
atgtccagcc gcctccgtgc ttgcaaaggg caccggggac tccaggccag acttgggcca
840
gagcagcaga gctgagcccc acaggctccg gacgcagagg tggcagtggc accagggccg
900
gcagagcttt ggagctctgg ctgtggacat ttttgtctgc tgtggacact gagaaagttg
960
gccatgaggc ctgcttggcc ggggatcgag acagtagcca agctccccgg cgagagcccc
1020
aatgccgtct gggggacgtt tagaggcgtg gcactaggag tgcacatctg tgagcatgac
1080
aagcttatcc tcccatggta acagaagtcc aggctgaggc tgattctgga cgctgtcctt
1140
tcagcacacg cagagcaaag atcgttggaa gccccagtgt gggagatgct cctcagggag
1200
gaagccatgt gagggggctg gctctgtggc gggtgagtgg tcccctcctc catcagcctg
1260
gacagccgct cggggttcta aggagtgact cctgtcccgg cctggtgtga gtgggcagtg
1320
taataaagtg tctttctata cggaaaaaaa aaaaaaaaa
1360
```

```
<210> 5016
<211> 284
<212> PRT
<213> Homo sapiens
```

```
<400> 5016
Met Ser Ala Pro Trp Arg Arg Ala Arg Pro Val Thr Thr Ser Gln Arg
1               5                   10                  15
Pro Arg Pro Ser Pro Gln Val Pro Pro Leu Ser Ala Gly Pro Ala Ala
            20                  25                  30
Ala Ala Ile Phe Val Gly Gly Ser Gln Ala Trp Leu Glu Met Pro Lys
        35                  40                  45
Ser Cys Ala Ala Arg Gln Cys Cys Asn Arg Tyr Ser Ser Arg Arg Lys
    50                  55                  60
Gln Leu Thr Phe His Arg Phe Pro Phe Ser Arg Pro Glu Leu Leu Lys
65                  70                  75                  80
Glu Trp Val Leu Asn Ile Gly Arg Gly Asn Phe Lys Pro Lys Gln His
                85                  90                  95
Thr Val Ile Cys Ser Glu His Phe Arg Pro Glu Cys Phe Ser Ala Phe
```

4195

```
                   100                    105                    110
Gly Asn Arg Lys Asn Leu Lys His Asn Ala Val Pro Thr Val Phe Ala
              115                    120                    125
Phe Gln Asp Pro Thr Gln Gln Val Arg Glu Asn Thr Asp Pro Ala Ser
          130                    135                    140
Glu Arg Gly Asn Ala Ser Ser Ser Gln Lys Glu Lys Val Leu Pro Glu
145                    150                    155                    160
Ala Gly Ala Gly Glu Asp Ser Pro Gly Arg Asn Met Asp Thr Ala Leu
                  165                    170                    175
Glu Glu Leu Gln Leu Pro Pro Asn Ala Glu Gly His Val Lys Gln Val
              180                    185                    190
Ser Pro Arg Arg Pro Gln Ala Thr Glu Ala Val Gly Arg Pro Thr Gly
          195                    200                    205
Pro Ala Gly Leu Arg Arg Thr Pro Asn Lys Gln Pro Ser Asp His Ser
      210                    215                    220
Tyr Ala Leu Leu Asp Leu Asp Ser Leu Lys Lys Lys Leu Phe Leu Thr
225                    230                    235                    240
Leu Lys Glu Asn Glu Lys Leu Arg Lys Arg Leu Gln Ala Gln Arg Leu
                  245                    250                    255
Val Met Arg Arg Met Ser Ser Arg Leu Arg Ala Cys Lys Gly His Arg
              260                    265                    270
Gly Leu Gln Ala Arg Leu Gly Pro Glu Gln Gln Ser
          275                    280
```

<210> 5017
<211> 785
<212> DNA
<213> Homo sapiens

<400> 5017
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gggccctcag cctctgaggg cagagatgct gtcagtgccg caggtgcatc acatacttct   60
agcatcctct ccaccctgca ttccaaatgc tgcttgctgc ctgccctgcc ctccgatgca  120
ggggtggggt ggggggcgga gggcccgccc agcatagctg cagtgtcaca aagccatggc  180
agaaggtcct agcggcgcca ccctgcccca gcctgaggag gagggagagg aggaacaac  240
cctgggcaga cggggcctca gggacctgtg tccttccgcc tccagagctg cccagccacg  300
ggctctcagg gtgctggggc agccccaggt cccctcttga actcagctgg ggccaggggc  360
cctcagaatg aaggcaggca ccaggcagga gcagcatccc cctccttgac ggtgctggca  420
ggagggccgc gccatgctga ctgcttgaac ctctgctgac ctgacagtgc tggcgggagg  480
gccgcaccat gctgactgcc tgaatctctg ctgaggctgc ctgcctgccg ggcccagctc  540
agcgccctct ccactgcgaa tcagtggcga tcatgtgatt tctatttctg ccccacaggg  600
taagggacga gtcttctgga aggctctgcc atggacattt gtcctcgggc tcagaggccc  660
caccctgccc cacacctgcc cctaatcact gcagtgtcca gcccagtgtt gaacagattg  720
```

tagcgttctg tctcattacg agcaaataaa tagactttca ttggaaaaaa aaaaaaaaaa
780
aaaaa
785

<210> 5018
<211> 63
<212> PRT
<213> Homo sapiens

<400> 5018
Gly Pro Ser Ala Ser Glu Gly Arg Asp Ala Val Ser Ala Ala Gly Ala
 1   5   10   15
Ser His Thr Ser Ser Ile Leu Ser Thr Leu His Ser Lys Cys Cys Leu
            20   25   30
Leu Pro Ala Leu Pro Ser Asp Ala Gly Val Gly Trp Gly Ala Glu Gly
        35   40   45
Pro Pro Ser Ile Ala Ala Val Ser Gln Ser His Gly Arg Arg Ser
    50   55   60

<210> 5019
<211> 2766
<212> DNA
<213> Homo sapiens

<400> 5019
nngctcgagt actggcgaag acgagaagaa gaggagcgtt ggagaatgga aatgagacgt
60
tatgaagagg acatgtactg gaggagaatg gaggaagaac aacatcattg ggatgatcgc
120
cgccgaatgc agatggagg ttatcctcat ggtcctccag gcccattagg ccttctggga
180
gtccgaccag gcatgcctcc tcagcctcag gggcctgcac ccttacgtcg tcctgactca
240
tctgatgacc gttatgtaat gacaaaacat gccaccattt atccaactga agaggagtta
300
caggcagttc agaaaattgt ttctattact gaacgtgctt taaaactcgt ttcagacagt
360
ttgtctgaac atgagaagaa caagaacaaa gagggagatg ataagaaaga gggaggtaaa
420
gacagagctt tgaaaggagt tttgcgagtg ggagtatttg caaaaggatt acttctccga
480
ggagatagaa atgtcaacct tgttttgctg tgctcagaga aaccttcaaa gacattatta
540
agccgtattg cagaaaacct acccaaacag cttgctttta taagccctga gaagtatgac
600
ataaaatgtg ctgtatctga agcggcaata attttgaatt catgtgtgga acccaaaatg
660
caagtcacta tcacactgac atctccaatt attcgagaag agaacatgag ggaaggagat
720
gtaacctcgg gtatggtgaa agacccaccg gacgtcttgg acaggcaaaa atgccttgac
780
gctctggctg ctctacgcca cgctaagtgg ttccaggcta gagctaatgg tctgcagtcc
840

```
tgtgtgatta tcatacgcat tcttcgagac ctctgtcagc gagttccaac ttggtctgat
900
tttccaagct gggctatgga gttactagta gagaaagcaa tcagcagtgc ttctagccct
960
cagagccctg gggatgcact gagaagagtt tttgaatgca tttcttcagg gattattctt
1020
aaaggtagtc ctggacttct ggatccttgt gaaaaggatc cctttgatac cttggcaaca
1080
atgactgacc agcagcgtga agacatcaca tccagtgcac agtttgcatt gagactcctt
1140
gcattccgcc agatacacaa agttctaggc atggatccat taccgcaaat gagccaacgt
1200
tttaacatcc acaacaacag gaaacgaaga agagatagtg atggagttga tggatttgaa
1260
gctgagggga aaaagacaa aaaagattat gataactttt aaaaagtgtc tgtaaatctt
1320
cagtgttaaa aaaacagatg cccatttgtt ggctgttttt cattcataat aatgtctaca
1380
ttgaaaaatt tatcaagaat ttaaaggatt tcatggaaga accaagtttt tctatgatat
1440
taaaaaatgt acagtgttag gtattatttg aatggaaaga cacccaaaaa aaaaatgtgc
1500
tccgactagg gggaaaacag tagttccgat ttttttcccat tatttttatt ttattttctg
1560
gttgccctag cttcccccccc tatttttgtg tcttttatta actagtgcat tgtcttatta
1620
aatcttcact gtatttaatg caggatgtgt gcttcagttg ctctgtgtat tttgatattt
1680
taatttagag gttttgtttg cttttttgaca ctagttgtaa gttactttgt tatagatggt
1740
atcctttacc ccttcttaat attttacagc agtacgtttt tttgtaacgt gagactgcag
1800
agtttgtttt tctatatgtg aaggattaca acacaaaaag ttatcctgcc attcgagtgc
1860
tcagaactga atgtttctgc agatcttgtg gcatttgtct ctagtgtgat atataaaggt
1920
gtaattaaga cagagttctg ttaatctaat caagtttgct gttagttgtg cattagcagt
1980
ataaaagcta atatatacta tatggtcttg caacagtttt aaagcctctg cataattgat
2040
aataaaaatg catgacattc ttgtttttaa tagactttta aaatcataat tttaggttta
2100
acacgtagat ctttgtacag ttgactttt gacatagcaa ggccaaaaat aactttctga
2160
atatttttt cttgtgtata agtggaaagg gcatttttca catataagtg ggctaaccaa
2220
tattttcaaa agaacttcat cattgtacaa ctaacaacag taactagccc ttaattatgg
2280
tgacagttcc ttattggtgt gtgtgagatt actctagcaa ctattacagt ataacacaga
2340
tgatcttctc cacacacccc atcacccaga taatttacag ttctgttaac agtgaggttg
2400
ataaagtatt actgataaaa aattatctaa ggaaaaaaac agaaaattat ttggtgtggc
2460
```

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catcttacct gcttatgtct cctacacaaa gctaaatatt ctagcagtga tgtaatgaaa
2520
aattacatct tactgttgat atatgtatgc tctggtacac agatgtcatt ttgttgtcac
2580
agcactacag tgaaatacac aaaaaatgaa attcatataa tgacttaaat gtattatatg
2640
ttagaattga caacataaac tacttttgct ttgaaatgat gtatgcttca gtaaaatcat
2700
attcaaattt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
2760
aaaaaa
2766
```

<210> 5020
<211> 433
<212> PRT
<213> Homo sapiens

<400> 5020
```
Xaa Leu Glu Tyr Trp Arg Arg Arg Glu Glu Glu Glu Arg Trp Arg Met
1               5                   10                  15
Glu Met Arg Arg Tyr Glu Glu Asp Met Tyr Trp Arg Arg Met Glu Glu
            20                  25                  30
Glu Gln His His Trp Asp Asp Arg Arg Arg Met Pro Asp Gly Gly Tyr
        35                  40                  45
Pro His Gly Pro Pro Gly Pro Leu Gly Leu Leu Gly Val Arg Pro Gly
    50                  55                  60
Met Pro Pro Gln Pro Gln Gly Pro Ala Pro Leu Arg Arg Pro Asp Ser
65                  70                  75                  80
Ser Asp Asp Arg Tyr Val Met Thr Lys His Ala Thr Ile Tyr Pro Thr
                85                  90                  95
Glu Glu Glu Leu Gln Ala Val Gln Lys Ile Val Ser Ile Thr Glu Arg
            100                 105                 110
Ala Leu Lys Leu Val Ser Asp Ser Leu Ser Glu His Glu Lys Asn Lys
        115                 120                 125
Asn Lys Glu Gly Asp Asp Lys Lys Glu Gly Gly Lys Asp Arg Ala Leu
    130                 135                 140
Lys Gly Val Leu Arg Val Gly Val Phe Ala Lys Gly Leu Leu Leu Arg
145                 150                 155                 160
Gly Asp Arg Asn Val Asn Leu Val Leu Leu Cys Ser Glu Lys Pro Ser
                165                 170                 175
Lys Thr Leu Leu Ser Arg Ile Ala Glu Asn Leu Pro Lys Gln Leu Ala
            180                 185                 190
Phe Ile Ser Pro Glu Lys Tyr Asp Ile Lys Cys Ala Val Ser Glu Ala
            195                 200                 205
Ala Ile Ile Leu Asn Ser Cys Val Glu Pro Lys Met Gln Val Thr Ile
    210                 215                 220
Thr Leu Thr Ser Pro Ile Ile Arg Glu Glu Asn Met Arg Glu Gly Asp
225                 230                 235                 240
Val Thr Ser Gly Met Val Lys Asp Pro Pro Asp Val Leu Asp Arg Gln
                245                 250                 255
Lys Cys Leu Asp Ala Leu Ala Ala Leu Arg His Ala Lys Trp Phe Gln
            260                 265                 270
Ala Arg Ala Asn Gly Leu Gln Ser Cys Val Ile Ile Ile Arg Ile Leu
```

```
           275                    280                    285
Arg Asp Leu Cys Gln Arg Val Pro Thr Trp Ser Asp Phe Pro Ser Trp
       290                    295                    300
Ala Met Glu Leu Leu Val Glu Lys Ala Ile Ser Ser Ala Ser Ser Pro
   305                    310                    315                    320
Gln Ser Pro Gly Asp Ala Leu Arg Arg Val Phe Glu Cys Ile Ser Ser
                   325                    330                    335
Gly Ile Ile Leu Lys Gly Ser Pro Gly Leu Leu Asp Pro Cys Glu Lys
               340                    345                    350
Asp Pro Phe Asp Thr Leu Ala Thr Met Thr Asp Gln Gln Arg Glu Asp
           355                    360                    365
Ile Thr Ser Ser Ala Gln Phe Ala Leu Arg Leu Leu Ala Phe Arg Gln
       370                    375                    380
Ile His Lys Val Leu Gly Met Asp Pro Leu Pro Gln Met Ser Gln Arg
   385                    390                    395                    400
Phe Asn Ile His Asn Asn Arg Lys Arg Arg Arg Asp Ser Asp Gly Val
                   405                    410                    415
Asp Gly Phe Glu Ala Glu Gly Lys Lys Asp Lys Lys Asp Tyr Asp Asn
               420                    425                    430
Phe
```

```
<210> 5021
<211> 494
<212> DNA
<213> Homo sapiens

<400> 5021
ntcatgacag cctaccattg aatttacaat tctgatatta atgaaatatc tctataaagg
60
gttgaagtgt cttcctgcaa caattgccaa ggaacaaaat tgtcaattta ttaatgaaac
120
atgacgtgtg ttgaacaaga caagctgggt caagcatttg aagatgcttt tgaggttctg
180
aggcaacatt caactggaga tcttcagtac tcgccagatt acaaaaatta cctggcttta
240
atcaaccatc gtcctcatgt caaaggaaat tccagctgct atggagtgtt gcctacagag
300
gagcctgtct ataattggag aacggtaatt aacagtgctg cggacttcta ttttgaagga
360
aatattcatc aatctctgca gaacataact gaaaaccagc tggtacaacc cactattctc
420
cagcaaaagg ggggaaaagg caggaagaag cttagactgt ttgaatacct tcacgaatcc
480
ctgtgtaatc cgga
494
```

```
<210> 5022
<211> 124
<212> PRT
<213> Homo sapiens

<400> 5022
Met Thr Cys Val Glu Gln Asp Lys Leu Gly Gln Ala Phe Glu Asp Ala
```

```
    1              5                  10                   15
 Phe Glu Val Leu Arg Gln His Ser Thr Gly Asp Leu Gln Tyr Ser Pro
             20                   25                   30
 Asp Tyr Lys Asn Tyr Leu Ala Leu Ile Asn His Arg Pro His Val Lys
         35                   40                   45
 Gly Asn Ser Ser Cys Tyr Gly Val Leu Pro Thr Glu Glu Pro Val Tyr
         50                   55                   60
 Asn Trp Arg Thr Val Ile Asn Ser Ala Ala Asp Phe Tyr Phe Glu Gly
 65                   70                   75                   80
 Asn Ile His Gln Ser Leu Gln Asn Ile Thr Glu Asn Gln Leu Val Gln
                 85                   90                   95
 Pro Thr Ile Leu Gln Gln Lys Gly Gly Lys Gly Arg Lys Lys Leu Arg
                 100                  105                  110
 Leu Phe Glu Tyr Leu His Glu Ser Leu Cys Asn Pro
                 115                  120
```

<210> 5023
<211> 3482
<212> DNA
<213> Homo sapiens

<400> 5023
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gggccgccgc agaggcccgg ccgcagcgca gggaagcctg ggggccagag gtcgccgctg
60
ccgccatgcc gctgctcttc ctcgagcgct cccctggcc cagcctccgc acctacacgg
120
gcctcagcgg cctggccctg ctgggcacca tcatcagcgc ctaccgcgcg ctcagccagc
180
ccgaggccgg ccccggcgag ccggaccagc taacggcctc gctgcagcct gagccgccgg
240
cgcccgcccg gccgagcgcc gggggacccc gggcccgcga tgtggcccag tacctgctct
300
cagacagcct cttcgtgtgg gttctagtaa ataccgcttg ctgtgttttg atgttggtgg
360
ctaagctcat ccagtgtatt gtgtttggcc ctcttcgagt gagtgagaga cagcatctca
420
aagacaaatt ttggaatttt attttctaca agttcatttt catctttggt gtgctgaatg
480
tccagacagt ggaagaggtg gtcatgtggt gcctctggtt tgccggactt gtctttctgc
540
acctgatggt tcagctctgc aaggatcgat ttgaatatct ttccttctcg cccaccacgc
600
cgatgagcag ccacggtcga gtcctgtccc tgttggttgc catgctgctt tcctgctgtg
660
gactggcggc cgtctgctcc atcaccggct acacccacgg aatgcacacc ttggctttca
720
tggctgcaga gtctcttctt gtgacagtga ggactgctca tgtgatttta cgatacgtaa
780
ttcacctctg ggacctcaac cacgaaggga cgtgggaagg aaaggggacg tatgtctatt
840
acacagactt tgtcatggag ctcactctcc tgtccctgga cctcatgcac catattcaca
900
tgttgttatt tggcaacatc tggttatcca tggccagcct ggtcatcttt atgcagctgc
960
```

gttacctgtt tcatgaggtg caacgtcgaa ttcgtcggca caagaactat ctacgtgtgg
1020

ttggaaacat ggaggccagg tttgcagttg caactccaga ggagctggct gtcaacaatg
1080

acgactgtgc catctgttgg gactccatgc aggctgcgcg gaaactgccc tgtggacatc
1140

ttttccacaa ctcctgtctt cgttcctggc tagaacaaga cacctcctgt ccaacatgca
1200

gaatgtctct taatattgcc gacaataatc gtgtcaggga agaacatcaa ggagagaact
1260

tggatgagaa tttggttcct gtagcagcag ccgaagggag acctcgctta aaccaacaca
1320

atcacttctt ccatttcgat gggtctcgga ttgcgagctg gctgccgagt ttttcggttg
1380

aagtgatgca caccaccaac attcttggca ttacgcaggc cagcaactcc agctcaatg
1440

caatggctca tcagattcaa gagatgtttc cccaggttcc ataccatctg gtactgcagg
1500

acctccagct gacacgctca gttgaaataa caacagacaa tattttagaa ggacggattc
1560

aagtaccttt tcctacacag cggtcagata gcatcagacc tgcattgaac agtcctgtgg
1620

aaaggccaag cagtgaccag gaagagggag aaacttctgc tcagaccgag cgtgtgccac
1680

tggacctcag tcctcgcctg gaggagacgc tggacttcgg cgaggtggaa gtggagccca
1740

gtgaggtgga agacttcgag gctcgtggga gccgcttctc caagtctgct gatgagagac
1800

agcgcatgct ggntgcagcg taaggacgaa ctcctccagc aagctcgcaa acgtttcttg
1860

aacaaaagtt ctgaagatga tgcggcctca gagagcttcc tcccctcgga aggtgcgtcc
1920

tctgaccccg tgaccctgcg tcgaaggatg ctggctgccg cccggaacgg aggcttcaga
1980

agcagcagac ctcctagcgc tcccttgcct tcctcagctg cctcctgcgc cctgtgcccg
2040

actgactgga ggaggcctgt cccaattctg ccgctccatg gaaaagcggg cttgactgca
2100

ttgccgctgt ataaagcatg tggtcttata gtgtttggac agctgataaa tttaatcctt
2160

ctttgtaata ctttcaatgt gacatttctc ttccccttag aaacactgca aattttaact
2220

gtaggtatga tctcttctgg tgttgactgg actgcttggg gtgggggacg atcaggagga
2280

agtgagncag tcgcctgcct gcagcaggca gcttctactc ctgcctcatg catacgtccc
2340

acaaatgcag gtgtcctgag caccacaccc agtgggaaga gtgtggggga ggcgcacagt
2400

gtgagcccgc ccccacgtcg tggggtaaca tctgttatca aactgctgtc gttgttgtgg
2460

aagcatgtag actgtgccag agccagaccc acgggctcat gcacccctga gcagcagggc
2520

atcttggaaa aggaactctt ggttcgatac ctggagcaga ggaggggaaa gtccagggct
2580

4202

ataggggtgtg atgaagtcac cccttctgt cccactacat ctgggactga ctttccgagc
2640
ctccagtcca aagccggctt gatttccgtg aactctggtg ctcctgcatc tcatgagtgt
2700
gccccatggg tcccctcccc tctcagcatt tccttgtccc gtctggacct ggggagtggt
2760
taggcagcaa gctttggttt atggttttca ttcattggtg aagtaaatta ggcagtgcta
2820
aagcctgtgg gtttggtcct tgaacaagat gtgggccttg caagatggga gagtaaacct
2880
tgaagggctt tattaaagaa ataaaaaga acttttgtat cttttatcct gggagcactg
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3000
cctgccttgg agagggccca ggtcccaaat ctcttcaaat tcttcacatg tttaactta
3060
aggatttgaa ccatgaagtc ataggttaca gacctcagtt ttatgcccca ttggattact
3120
tttttttttt tttttttta ctctttgaaa gctttgtttt gtggtagtcc ttttgggaag
3180
aatccagtat tatctacaat tattggcaaa gtttaaatgt attttacata acggaaagtt
3240
tttagaatgt tgaaaagtaa ttgaaaaagg tgataggtaa atttttaggc aaagataatt
3300
tatttcaata aatctttcaa aagccttacc ttgaaatgct gttagtaaat ttctgtgatt
3360
tttttttttt aatttgtttt gctgagagca tagctatttg tttttattgt aaaacaataa
3420
taataataaa aagcaaactc taaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa
3480
aa
3482

<210> 5024
<211> 323
<212> PRT
<213> Homo sapiens

<400> 5024
Met Arg Asp Ser Ala Cys Trp Xaa Gln Arg Lys Asp Glu Leu Leu Gln
1   5   10   15
Gln Ala Arg Lys Arg Phe Leu Asn Lys Ser Ser Glu Asp Asp Ala Ala
            20   25   30
Ser Glu Ser Phe Leu Pro Ser Glu Gly Ala Ser Ser Asp Pro Val Thr
        35   40   45
Leu Arg Arg Arg Met Leu Ala Ala Ala Arg Asn Gly Gly Phe Arg Ser
    50   55   60
Ser Arg Pro Pro Ser Ala Pro Leu Pro Ser Ser Ala Ala Ser Cys Ala
65   70   75   80
Leu Cys Pro Thr Asp Trp Arg Arg Pro Val Pro Ile Leu Pro Leu His
                85   90   95
Gly Lys Ala Gly Leu Thr Ala Leu Pro Leu Tyr Lys Ala Cys Gly Leu
            100   105   110
Ile Val Phe Gly Gln Leu Ile Asn Leu Ile Leu Leu Cys Asn Thr Phe

4203

```
                115                    120                    125
Asn Val Thr Phe Leu Phe Pro Leu Glu Thr Leu Gln Ile Leu Thr Val
        130                135                    140
Gly Met Ile Ser Ser Gly Val Asp Trp Thr Ala Trp Gly Gly Gly Arg
145                150                155                    160
Ser Gly Gly Ser Glu Xaa Val Ala Cys Leu Gln Gln Ala Ala Ser Thr
                165                170                    175
Pro Ala Ser Cys Ile Arg Pro Thr Asn Ala Gly Val Leu Ser Thr Thr
            180              185                190
Pro Ser Gly Lys Ser Val Gly Glu Ala His Ser Val Ser Pro Pro Pro
        195                200                    205
Arg Arg Gly Val Thr Ser Val Ile Lys Leu Leu Ser Leu Leu Trp Lys
    210                215                    220
His Val Asp Cys Ala Arg Ala Arg Pro Thr Gly Ser Cys Thr Pro Glu
225                230                235                    240
Gln Gln Gly Ile Leu Glu Lys Glu Leu Leu Val Arg Tyr Leu Glu Gln
                245                250                    255
Arg Arg Gly Lys Ser Arg Ala Ile Gly Cys Asp Glu Val Thr Pro Phe
            260                265                270
Cys Pro Thr Thr Ser Gly Thr Asp Phe Pro Ser Leu Gln Ser Lys Ala
        275                280                285
Gly Leu Ile Ser Val Asn Ser Gly Ala Pro Ala Ser His Glu Cys Ala
    290                295                300
Pro Trp Val Pro Ser Pro Leu Ser Ile Ser Leu Ser Arg Leu Asp Leu
305                310                315                    320
Gly Ser Gly
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<210> 5025
<211> 2596
<212> DNA
<213> Homo sapiens

<400> 5025
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120
cgccctcacg cccggcgagc ccgcgaggtc actatcatat gacaaaggct ttgccgcagt
180
tcatcttcct ccctgtgtac tttccatttg ccttcctgga atcctgctgg catcacagaa
240
gctggaagtt gtgatgttcc actgaaatca caatggaaag tctgacttga ctggtcacag
300
taatgaaagg cagtaataga aataaggatc attcagcaga aggagaaggg gttggaaaac
360
gaccaaaacg aaagtgtgct ttcagtggca tccatttgct agcaaagaaa cttcttgatt
420
tttcagaaga ggaagaagag gaagacgaag aggaggatat tggataaggt tcaacttctt
480
gggggccgat ggcctaagag caagagtgtg gtgaaactga agatggatga atcaccagag
540
cagcgagccc ggagaccaat gaatgcattt cttttatttt gcaaacgcca tcgctctctt
600
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gtacgtcagg aacaccccag gcttgataac cgaggtgcta ccaagatact agctgattgg
660
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720
gatgcattta tgaaagcaaa tcctggctac aaatggtgtc ctaccacaaa caagcctgtg
780
aaatccccac acccactgtc aatccacgaa agaaactttg ggccttccca tctgactctt
840
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900
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1080
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1200
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1260
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1320
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1380
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1440
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1620
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1680
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1740
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1980
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2040
ccccctatgga agatgcacta ccacccagcc tatcaggaca ggccaagcct gaggacagtg
2100
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2160
ctctttataa aaccctggtg tctgagggca tgctcacctc tctgcgagct aatgttgaca
2220
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gaggaaaacg aagctcagga aaaggaaact cctctgatca tgaagggtgt tggaatgaag
2280
aaagctggac atttagtcag agtgggacca gtgggagcaa gaagttcaag aagacaaagc
2340
caaaagaaga ctgtctcctt ggctccgcaa agctggatga agaatttgaa aaaaaattca
2400
acagcctccc tcaatatagt cctgttacat ttgaccggaa atgtgtacct gtcccaagaa
2460
aaaagaagaa gactggaaat gtgtcctcag aaccgactaa aaccagcaaa ggtcctttcc
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2596

<210> 5026
<211> 136
<212> PRT
<213> Homo sapiens

<400> 5026

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Met Asp Glu Ser Pro Glu Gln Arg Ala Arg Arg Pro Met Asn Ala Phe
 1               5                  10                  15
Leu Leu Phe Cys Lys Arg His Arg Ser Leu Val Arg Gln Glu His Pro
                20                  25                  30
Arg Leu Asp Asn Arg Gly Ala Thr Lys Ile Leu Ala Asp Trp Trp Ala
                35                  40                  45
Val Leu Asp Pro Lys Glu Lys Gln Lys Tyr Thr Asp Met Ala Lys Glu
            50                  55                  60
Tyr Lys Asp Ala Phe Met Lys Ala Asn Pro Gly Tyr Lys Trp Cys Pro
65                  70                  75                  80
Thr Thr Asn Lys Pro Val Lys Ser Pro His Pro Leu Ser Ile His Glu
                85                  90                  95
Arg Asn Phe Gly Pro Ser His Leu Thr Leu Gln Glu Thr Cys Gln Ala
                100                 105                 110
Pro Arg Lys Gln Arg Leu Lys Lys Cys Leu Ser Leu Thr Leu Glu Trp
            115                 120                 125
Leu Ile Leu Leu Lys Trp Glu Ala
            130                 135
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<210> 5027
<211> 359
<212> DNA
<213> Homo sapiens

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120
acctacccgc gcctggagga gtaccgccgg ggcatcttag agactggtc caacgctatc
180
tccgcgctct actgcaggtg cagctgatgc attgctggtc tctcatctgc agcttccaca
240

gagtgccaag cccctcactc agcccatccc tgggctctgc tccggggccc caagacccag
300
gaggaggagc gttctgcctg cccccctccca cctccctgc aatacagcct ttgtgcggn
359

<210> 5028
<211> 68
<212> PRT
<213> Homo sapiens

<400> 5028
Xaa Gly Gly Gly Ala Gly Ala Leu Gly Ala Arg His Gly Gly Lys Gly
1   5   10   15
Gln Gly Gln Gln Gln Arg Ala Gln Arg Gly His Gly Gly Ser Ala Gly
            20   25   30
Lys Thr His Lys Phe Ser Ala Gly Thr Tyr Pro Arg Leu Glu Glu Tyr
        35   40   45
Arg Arg Gly Ile Leu Gly Asp Trp Ser Asn Ala Ile Ser Ala Leu Tyr
    50   55   60
Cys Arg Cys Ser
65

<210> 5029
<211> 1440
<212> DNA
<213> Homo sapiens

<400> 5029
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120
ttcatgtgtg ctgatatttt tggatcattt gtttactcgt tttttgagtt tacctgattt
180
tttttttctc tcaggtaata ggaaatgaat gatgatggaa aagtcaatgc tagctctgag
240
gggtacttta ttttagttgg attttctaat tggccttatc tggaagtagt tctctttgtg
300
gttattttga tcttctgctt gatgacactg ataggaaacc tgttcatcat catcctgacg
360
tacctggact cccatctcca tactcccttg tatttcttcc tttcaaatct ctcatttctg
420
gatctctgct acaccaccag ctctatccct cagttgctgg tcagtctctg gggtgtggaa
480
aagaccattt cttatgctgg ttgcatggtt caactttact tttttctcac actgggaacc
540
acagagtgtg tcctactggt ggtgatgtcc tatgaccgtt atgcagctgt gtgtagacct
600
ttgcattaca ctgtcctcat gcactctcgt ttctgccact tgttggctgt ggcttcttgg
660
gtaagtggtt ttacaaaccc agcacttcat tcctccttca ccttctgggt acctctgtgt
720
ggacaccgcc aaatagatca ctttttctgt gaagttccgg cactttatg attatcattt
780

4207

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cttctcaccc tcattttcac ttcctatggt gctattgccc aggctgtact gaggatgcag
900
tcaaccactg ggcttcagaa agtatttgga acatgtggag ctcatcatat ggttgtatct
960
ctcttttca ttccggccat gtgcatgtat ctccagccac catcagggaa ttctcaagat
1020
caaggcaagt tcattgctct cttttatact gttgttacac ctagtcttaa ccctctaatc
1080
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1140
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1200
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1260
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1320
accattcact tttggagaaa acagctgtgt aaaatcaaga taaacatct atagtgatgt
1380
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1440

<210> 5030
<211> 188
<212> PRT
<213> Homo sapiens

<400> 5030
Met Asn Asp Asp Gly Lys Val Asn Ala Ser Ser Glu Gly Tyr Phe Ile
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Leu Val Gly Phe Ser Asn Trp Pro Tyr Leu Glu Val Val Leu Phe Val
            20   25   30
Val Ile Leu Ile Phe Cys Leu Met Thr Leu Ile Gly Asn Leu Phe Ile
            35   40   45
Ile Ile Leu Thr Tyr Leu Asp Ser His Leu His Thr Pro Leu Tyr Phe
        50   55   60
Phe Leu Ser Asn Leu Ser Phe Leu Asp Leu Cys Tyr Thr Thr Ser Ser
65   70   75   80
Ile Pro Gln Leu Leu Val Ser Leu Trp Gly Val Glu Lys Thr Ile Ser
                85   90   95
Tyr Ala Gly Cys Met Val Gln Leu Tyr Phe Phe Leu Thr Leu Gly Thr
            100   105   110
Thr Glu Cys Val Leu Leu Val Val Met Ser Tyr Asp Arg Tyr Ala Ala
            115   120   125
Val Cys Arg Pro Leu His Tyr Thr Val Leu Met His Ser Arg Phe Cys
        130   135   140
His Leu Leu Ala Val Ala Ser Trp Val Ser Gly Phe Thr Asn Pro Ala
145   150   155   160
Leu His Ser Ser Phe Thr Phe Trp Val Pro Leu Cys Gly His Arg Gln
                165   170   175
Ile Asp His Phe Phe Cys Glu Val Pro Ala Leu Leu
            180   185

<210> 5031
<211> 505
<212> DNA
<213> Homo sapiens

<400> 5031
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gaatggggtg gaccgacgtt ccctgcagcg ttcagcaagg ctggctctag aagtgctgga
120
gagggccaag aggagggcgg tggactggca tgccctggag cgtcccaaag gctgcatggg
180
ggtccttgcc cgggaggcgc cccacctaga gaaacagccg gcagccggcc cgcagcgcgt
240
tctcccggga gagagagaag agagaccccc aacccttagt gcttccttca gaacaatggc
300
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360
aggagggggca acccatgtct atcgttatca cagaggcgag tcgaagctgc acatgtgctt
420
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ctatcaaata tcagagcatg ctcca
505

<210> 5032
<211> 158
<212> PRT
<213> Homo sapiens

<400> 5032
Met Asp Asn Cys Leu Ala Ala Ala Ala Leu Asn Gly Val Asp Arg Arg
1   5   10   15
Ser Leu Gln Arg Ser Ala Arg Leu Ala Leu Glu Val Leu Glu Arg Ala
            20   25   30
Lys Arg Arg Ala Val Asp Trp His Ala Leu Glu Arg Pro Lys Gly Cys
        35   40   45
Met Gly Val Leu Ala Arg Glu Ala Pro His Leu Glu Lys Gln Pro Ala
    50   55   60
Ala Gly Pro Gln Arg Val Leu Pro Gly Glu Arg Glu Glu Arg Pro Pro
65   70   75   80
Thr Leu Ser Ala Ser Phe Arg Thr Met Ala Glu Phe Met Asp Tyr Thr
                85   90   95
Ser Ser Gln Cys Gly Lys Tyr Tyr Ser Ser Val Pro Glu Glu Gly Gly
                100   105   110
Ala Thr His Val Tyr Arg Tyr His Arg Gly Glu Ser Lys Leu His Met
                115   120   125
Cys Leu Asp Ile Gly Asn Gly Gln Arg Lys Asp Arg Lys Lys Thr Ser
        130   135   140
Leu Gly Pro Gly Gly Ser Tyr Gln Ile Ser Glu His Ala Pro
145   150   155

<210> 5033
<211> 2888

<212> DNA
<213> Homo sapiens

<400> 5033
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240
ccccggtacg tggtggagcc accccggctg ccgctcgcgg tgagtttgaa gccgcctttc
300
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360
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420
ccactggact tggggccacc actgccccc aagatagagg ctggcacgtt cagcagtgac
480
ctgcagaccc cgcgcccagg cagtgctgag agtgccctgt cggtgcagag accagcccc
540
ccgacacctg ccatgtacaa gtttaggccg gctttcccca cgggtcccaa ggtgcccttc
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660
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780
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1320
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1500

4210

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2700
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2760
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2888


<210> 5034
<211> 550
<212> PRT
<213> Homo sapiens
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<400> 5034
Xaa Asp Glu Asp Lys Glu Asp Asp Phe Arg Ala Pro Leu Tyr Lys Asn
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Val Asp Val Arg Gly Ile Gln Val Arg Met Lys Trp Cys Ala Thr Cys
             20   25   30
His Phe Tyr Arg Pro Pro Arg Cys Ser His Cys Ser Val Cys Asp Asn
         35   40   45
Cys Val Glu Val Thr Gly Lys Phe Arg Gly Gly Val Asn Pro Phe Thr
     50   55   60
Arg Gly Cys Cys Gly Asn Val Glu His Val Leu Cys Ser Pro Leu Ala
65   70   75   80
Pro Arg Tyr Val Val Glu Pro Pro Arg Leu Pro Leu Ala Val Ser Leu
             85   90   95
Lys Pro Pro Phe Leu Arg Pro Glu Leu Leu Asp Arg Ala Ala Pro Leu
            100   105   110
Lys Val Lys Leu Ser Asp Asn Gly Leu Lys Ala Gly Leu Gly Arg Ser
            115   120   125
Lys Ser Lys Gly Ser Leu Asp Arg Leu Asp Glu Lys Pro Leu Asp Leu
    130   135   140
Gly Pro Pro Leu Pro Pro Lys Ile Glu Ala Gly Thr Phe Ser Ser Asp
145   150   155   160
Leu Gln Thr Pro Arg Pro Gly Ser Ala Glu Ser Ala Leu Ser Val Gln
             165   170   175
Arg Thr Ser Pro Pro Thr Pro Ala Met Tyr Lys Phe Arg Pro Ala Phe
             180   185   190
Pro Thr Gly Pro Lys Val Pro Phe Cys Gly Pro Gly Glu Gln Val Pro
             195   200   205
Gly Pro Asp Ser Leu Thr Leu Gly Asp Asp Asn Ile Arg Ser Leu Asp
    210   215   220
Phe Val Ser Glu Pro Ser Leu Asp Leu Pro Asp Tyr Gly Pro Gly Gly
225   230   235   240
Leu His Ala Ala Tyr Pro Pro Ser Pro Pro Leu Ser Ala Ser Asp Ala
             245   250   255
Phe Ser Gly Ala Leu Arg Ser Leu Ser Leu Lys Ala Ser Ser Arg Arg
             260   265   270
Gly Gly Asp His Val Ala Leu Gln Pro Leu Arg Ser Glu Gly Gly Pro
    275   280   285
Pro Thr Pro His Arg Ser Ile Phe Ala Pro His Ala Leu Pro Asn Arg
    290   295   300
Asn Gly Ser Leu Ser Tyr Asp Ser Leu Leu Asn Pro Gly Ser Pro Gly
305   310   315   320
Gly His Ala Cys Pro Ala His Pro Ala Val Gly Val Ala Gly Tyr His
            325   330   335
Ser Pro Tyr Leu His Pro Gly Ala Thr Gly Asp Pro Pro Arg Pro Leu
            340   345   350
Pro Arg Ser Phe Ser Pro Val Leu Gly Pro Arg Pro Arg Glu Pro Ser
    355   360   365
Pro Val Arg Tyr Asp Asn Leu Ser Arg Thr Ile Met Ala Ser Ile Gln
    370   375   380
Glu Arg Lys Asp Arg Glu Glu Arg Glu Arg Leu Leu Arg Ser Gln Ala
385   390   395   400
Asp Ser Leu Phe Gly Asp Ser Gly Val Tyr Asp Ala Pro Ser Ser Tyr
             405   410   415
Ser Leu Gln Gln Ala Ser Val Leu Ser Glu Gly Pro Arg Gly Pro Ala

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                  420                      425                      430
Leu Arg Tyr Gly Ser Arg Asp Asp Leu Val Ala Gly Pro Gly Phe Gly
            435                      440                      445
Gly Ala Arg Asn Pro Ala Leu Gln Thr Ser Leu Ser Ser Leu Ser Ser
        450                      455                      460
Ser Val Ser Arg Ala Pro Arg Thr Ser Ser Ser Ser Leu Gln Ala Asp
465                      470                      475                      480
Gln Ala Ser Ser Asn Ala Pro Gly Ala Pro Ala Gln Gln Trp Leu Thr
                485                      490                      495
Gln Val Thr Cys Thr Pro Gly Pro Ala Leu Pro Ala Arg His Ser Pro
            500                      505                      510
Leu Thr Ile Leu Arg Gly Pro Gln Ser Cys Arg Leu His Pro His Gly
        515                      520                      525
Pro Pro Arg Ala Thr Ala Leu Ala Asp Arg Ala Glu Gly Pro Pro Ser
    530                      535                      540
Ala Glu Asp Ser Pro Lys
545                      550


<210> 5035
<211> 2002
<212> DNA
<213> Homo sapiens

<400> 5035
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240
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780
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900
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960
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1020
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1080
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1200
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1260
aattcacccc attctgtccc tgccctagt cacctagctg tgagggtgcc tgaggctgaa
1320
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1380
ctgcatcccc gagcacccca ccctccaggc tccactaagg agggaggggc tgtctgcagc
1440
agctgcactc agcacctagg ccagggtggg gccgccgcag atgggctcag gaagccccag
1500
gtgcactcag cgagagccct gcctttcagt tgccaaaagc tgcatcaggg gaatgcggca
1560
aggcacacag ggctctggca gccctgggg actgggcgct gccctggga ggggagagcc
1620
tggccagggc tggtgttggg cccggagcag catcttccgg tgctatcctc ccctcccacc
1680
cctcacagct caagccaagt ccagcggccg cagtcttcac ctctccacac tcactttta
1740
tctggtgttt ttacttctgc ctgcgtttgc tctctagcca ataaaccgtc cttgtgtgcg
1800
agcgcaaagc tcgggtgctc tatgactacg aggcagccga cagcagtgag ctggccctgc
1860
tggctgatga gctcatcact gtctacagcc tgcctggcat ggaccctgac tggctcattg
1920
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1980
caggtgcccc catcccccccc gc
2002
```

```
<210> 5036
<211> 384
<212> PRT
<213> Homo sapiens
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<400> 5036
Arg Pro Cys Gly His Ala Met Asp Phe Asn Met Lys Lys Leu Ala Ser
1               5                   10                  15
Asp Ala Gly Ile Phe Phe Thr Arg Ala Val Gln Phe Thr Glu Glu Lys
            20                  25                  30
Phe Gly Gln Ala Glu Lys Thr Glu Leu Asp Ala His Phe Glu Asn Leu
        35                  40                  45
Leu Ala Arg Ala Asp Ser Thr Lys Asn Trp Thr Glu Lys Ile Leu Arg
    50                  55                  60
Gln Thr Glu Val Leu Leu Gln Pro Asn Pro Ser Ala Arg Val Glu Glu
```

```
        65                   70                   75                   80
    Phe Leu Tyr Glu Lys Leu Asp Arg Lys Val Pro Ser Arg Val Thr Asn
                    85                   90                   95
    Gly Glu Leu Leu Ala Gln Tyr Met Ala Asp Ala Ala Ser Glu Leu Gly
                    100                  105                  110
    Pro Thr Thr Pro Tyr Gly Lys Thr Leu Ile Lys Val Ala Glu Ala Glu
                    115                  120                  125
    Lys Gln Leu Gly Ala Ala Glu Arg Asp Phe Ile His Thr Ala Ser Ile
            130                  135                  140
    Ser Phe Leu Thr Pro Leu Arg Asn Phe Leu Glu Gly Asp Trp Lys Thr
    145                  150                  155                  160
    Ile Ser Lys Glu Ser Arg Leu Leu Gln Asn Arg Arg Leu Asp Leu Asp
                    165                  170                  175
    Ala Cys Lys Ala Arg Leu Lys Lys Ala Lys Ala Ala Glu Ala Lys Ala
                    180                  185                  190
    Thr Leu Trp Asn Asp Glu Val Asp Lys Ala Glu Gln Glu Leu Arg Val
                    195                  200                  205
    Ala Gln Thr Glu Phe Asp Arg Gln Ala Glu Val Thr Arg Leu Leu Leu
            210                  215                  220
    Glu Gly Ile Ser Ser Thr His Val Asn His Leu Arg Cys Leu His Glu
    225                  230                  235                  240
    Phe Val Lys Ser Gln Thr Thr Tyr Tyr Ala Gln Cys Tyr Arg His Met
                    245                  250                  255
    Leu Asp Leu Gln Lys Gln Leu Gly Ser Ser Gln Gly Ala Ile Ser Arg
                    260                  265                  270
    His Leu Arg Gly His His Arg Ala Arg Leu Pro Pro Leu Ser Ser Thr
                    275                  280                  285
    Ser Pro Thr Thr Ala Ala Ala Thr Met Pro Val Val Pro Ser Val Ala
            290                  295                  300
    Ser Leu Ala Pro Pro Gly Glu Ala Ser Leu Cys Leu Glu Glu Val Ala
    305                  310                  315                  320
    Pro Pro Ala Ser Gly Thr Arg Lys Ala Arg Val Leu Tyr Asp Tyr Glu
                    325                  330                  335
    Ala Ala Asp Ser Ser Glu Leu Ala Leu Leu Ala Asp Glu Leu Ile Thr
            340                  345                  350
    Val Tyr Ser Leu Pro Gly Met Asp Pro Asp Trp Leu Ile Gly Glu Arg
            355                  360                  365
    Gly Asn Lys Lys Gly Lys Val Pro Val Thr Tyr Leu Glu Leu Leu Ser
            370                  375                  380
```

<210> 5037
<211> 2102
<212> DNA
<213> Homo sapiens

<400> 5037
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agtcttcagg ttttctttag aaaacttgaa gatctggcca cagctggcat cctggcagcg
120
gtttgctgga gttgagggtc agccgtccct ctgcagggtg ggtcaccctc ctgttaacca
180
cgccctgccc cgccccgctt cctccctctc gtgcgtcatc aagcatttgc tgttgttttc
240

```
ctcatagtag tgataagaga aaagtgaaat atctttgtct ccctgtctct gtcaaaagtg
300
ggaaaacgca agatagacca ggagggccgt gtgtttcaag aaaagtggga gagagcgtat
360
ttcttcgtgg aagtacagaa tattccaaca tgtctcatat gcaaacaaag catgtctgtg
420
tccaaagaat ataacctaag acgccactat caaaccaatc acagcaagca ttatgaccag
480
tatacggaaa gaatgcgtga cgagaagctt cacgagctga aaaaagggct caggaagtat
540
ctcttaggct catcagacac cgagtgtccc gagcaaaaac aagtgtttgc aaacccaagt
600
ccaacccaga atccccccgt gcagcctgta gaggacctag ctgggaactt atgggagaag
660
ttacgtgaaa aaatcaggtc ttttgtggca tattctatcg caatcgatga gatcacggat
720
ataaataata ccacccagtt ggccatattc atccgtggtg tcgatgagaa tttcgatgtg
780
tccgaagaac ttctggacac ggtgcccatg acgggtacaa aatctggcaa cgagatcttt
840
tcgcgtgttg agaagagcct gaaaaagttc tgtatcgact ggtcgaaatt agtaagcgtg
900
gcctccactg cacccccagc gatggtggat gccaataacg ggcttgtcac aaaactgaag
960
tccagggtgg cgacgttctg caagggtgcg gaactgaagt ccatctgttg tataattcat
1020
ccggaatcac tctgtgctca gaagttgaag atggaccacg tcatggacgt ggtagtgaag
1080
tccgtgaact ggatatgctc ccggggactg aaccacagcg agttcacaac cttgctctat
1140
gagctggaca gccagtatgg tagcctcctg tactacacgg agattaagtg gctcagtcgc
1200
gggctcgtgc taaagagatt tttcgaatcc ttggaagaaa tcgactcctt catgtcatcc
1260
agagggaaac ccctgcctca actgagctcc atagattgga tccgagacct ggccttcttg
1320
gttgacatga cgatgcatct gaacgctttg aacatctctc tccaaggaca ctcccaaatc
1380
gtcacgcaga tgtatgacct gatccgggcg ttcctagcaa aactgtgcct ctgggagact
1440
catttgacga ggaataatct ggcccacttt cccaccctga aattggcttc cagaaatgaa
1500
agcgatggcc tgaactacat tcccaaaatc gcggaactca gaccgaatt ccagaaaagg
1560
ctgtctgatt tcaaactcta cgaaagcgaa ctgactctgt tcagctcccc gttctccacg
1620
aagatcgaca gtgtgcacga ggagctccag atggaggtta tcgacctgca atgcaacacg
1680
gtcctgaaga cgaaatacga caaggtggga ataccagaat tctacaagta cctctggggt
1740
agctacccga aatacaagca ccattgcgca aagattcttt ccatgttcgg gagcacctac
1800
atctgcgaac agctgttctc cattatgaaa ctgagcaaaa caaaatactg ctcccagtta
1860
```

aaggattccc agtgggattc tgtactccac atcgcaacgt gatggagaga aaactcctgg
1920
cagggcccta tggtgggaaa ggctggagtc ttctagtccc aagggattgg gagatgacaa
1980
aatgaatttt ttttctttt ttgagatgga gtcttgctct gtcgcccagg ttggagtgca
2040
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2100
ca
2102

<210> 5038
<211> 533
<212> PRT
<213> Homo sapiens

<400> 5038
Gly Lys Arg Lys Ile Asp Gln Glu Gly Arg Val Phe Gln Glu Lys Trp
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Glu Arg Ala Tyr Phe Phe Val Glu Val Gln Asn Ile Pro Thr Cys Leu
            20   25   30
Ile Cys Lys Gln Ser Met Ser Val Ser Lys Glu Tyr Asn Leu Arg Arg
        35   40   45
His Tyr Gln Thr Asn His Ser Lys His Tyr Asp Gln Tyr Thr Glu Arg
    50   55   60
Met Arg Asp Glu Lys Leu His Glu Leu Lys Lys Gly Leu Arg Lys Tyr
65   70   75   80
Leu Leu Gly Ser Ser Asp Thr Glu Cys Pro Glu Gln Lys Gln Val Phe
                85   90   95
Ala Asn Pro Ser Pro Thr Gln Lys Ser Pro Val Gln Pro Val Glu Asp
            100   105   110
Leu Ala Gly Asn Leu Trp Glu Lys Leu Arg Glu Lys Ile Arg Ser Phe
        115   120   125
Val Ala Tyr Ser Ile Ala Ile Asp Glu Ile Thr Asp Ile Asn Asn Thr
    130   135   140
Thr Gln Leu Ala Ile Phe Ile Arg Gly Val Asp Glu Asn Phe Asp Val
145   150   155   160
Ser Glu Glu Leu Leu Asp Thr Val Pro Met Thr Gly Thr Lys Ser Gly
                165   170   175
Asn Glu Ile Phe Ser Arg Val Glu Lys Ser Leu Lys Lys Phe Cys Ile
            180   185   190
Asp Trp Ser Lys Leu Val Ser Val Ala Ser Thr Gly Thr Pro Ala Met
        195   200   205
Val Asp Ala Asn Asn Gly Leu Val Thr Lys Leu Lys Ser Arg Val Ala
    210   215   220
Thr Phe Cys Lys Gly Ala Glu Leu Lys Ser Ile Cys Cys Ile Ile His
225   230   235   240
Pro Glu Ser Leu Cys Ala Gln Lys Leu Lys Met Asp His Val Met Asp
                245   250   255
Val Val Val Lys Ser Val Asn Trp Ile Cys Ser Arg Gly Leu Asn His
            260   265   270
Ser Glu Phe Thr Thr Leu Leu Tyr Glu Leu Asp Ser Gln Tyr Gly Ser
        275   280   285
Leu Leu Tyr Tyr Thr Glu Ile Lys Trp Leu Ser Arg Gly Leu Val Leu

4217

```
        290                    295                    300
Lys Arg Phe Phe Glu Ser Leu Glu Glu Ile Asp Ser Phe Met Ser Ser
305                    310                    315                    320
Arg Gly Lys Pro Leu Pro Gln Leu Ser Ser Ile Asp Trp Ile Arg Asp
                325                    330                    335
Leu Ala Phe Leu Val Asp Met Thr Met His Leu Asn Ala Leu Asn Ile
                340                    345                    350
Ser Leu Gln Gly His Ser Gln Ile Val Thr Gln Met Tyr Asp Leu Ile
                355                    360                    365
Arg Ala Phe Leu Ala Lys Leu Cys Leu Trp Glu Thr His Leu Thr Arg
                370                    375                    380
Asn Asn Leu Ala His Phe Pro Thr Leu Lys Leu Ala Ser Arg Asn Glu
385                    390                    395                    400
Ser Asp Gly Leu Asn Tyr Ile Pro Lys Ile Ala Glu Leu Lys Thr Glu
                405                    410                    415
Phe Gln Lys Arg Leu Ser Asp Phe Lys Leu Tyr Glu Ser Glu Leu Thr
                420                    425                    430
Leu Phe Ser Ser Pro Phe Ser Thr Lys Ile Asp Ser Val His Glu Glu
                435                    440                    445
Leu Gln Met Glu Val Ile Asp Leu Gln Cys Asn Thr Val Leu Lys Thr
                450                    455                    460
Lys Tyr Asp Lys Val Gly Ile Pro Glu Phe Tyr Lys Tyr Leu Trp Gly
465                    470                    475                    480
Ser Tyr Pro Lys Tyr Lys His His Cys Ala Lys Ile Leu Ser Met Phe
                485                    490                    495
Gly Ser Thr Tyr Ile Cys Glu Gln Leu Phe Ser Ile Met Lys Leu Ser
                500                    505                    510
Lys Thr Lys Tyr Cys Ser Gln Leu Lys Asp Ser Gln Trp Asp Ser Val
                515                    520                    525
Leu His Ile Ala Thr
        530
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```
<210> 5039
<211> 3059
<212> DNA
<213> Homo sapiens

<400> 5039
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120
cgcgcgcgga gcgacgccgg gccagcaatg ctgcttggag cctctctggt gggggtgctg
180
ctgttctcca agctggtgct gaaactgccc tggacccagg tgggattctc cctgttgttc
240
ctctacttgg gatctggcgg ctggcgcttc atccgggtct tcatcaagac catcaggcgc
300
gatatctttg gcggcctggt cctcctgaag gtgaaggcaa aggtgcgaca gtgcctgcag
360
gagcggcgga cagtgcccat tttgtttgcc tctaccgttc ggcgccaccc cgacaagacg
420
gccctgatct tcgagggcac agatacccac tggaccttcc gccagctgga tgagtactca
480
```

agcagtgtag ccaacttcct gcaggcccgg ggcctggcct cgggcgatgt ggctgccatc
540
ttcatggaga accgcaatga gttcgtgggc ctatggctgg gcatggccaa gctcggtgtg
600
gaggcagccc tcatcaacac caacctgcgg cgggatgctc tgctccactg cctcaccacc
660
tcgcgcgcac gggcccttgt ctttggcagc gaaatggcct cagccatctg tgaggtccat
720
gccagcccgg acccctcgct cagcctcttc tgctctggct cctgggagcc cggtgcggtg
780
cctccaagca cagaacacct ggaccctctg ctgaaagatg ctcccaagca ccttcccagt
840
tgtcctgaca agggcttcac agataaactg ttctacatct acacatccgg caccacaggg
900
ctgcccaagg ccgccatcgt ggtgcacagc aggtattacc gcatggctgc cctggtgtac
960
tatggattcc gcatgcggcc caacgacatc gtctatgact gcctccccct ctaccactca
1020
gcaggaaaca tcgtgggaat cggccagtgc ctgctgcatg gcatgacggt ggtgattcgg
1080
aagaagttct cagcctcccg gttctgggac gattgtatca gtacaactg cacgattgtg
1140
cagtacattg gtgaactgtg ccgctacctc ctgaaccagc caccgcggga ggcagaaaac
1200
cagcaccagg ttcgcatggc actaggcaat gcctccggca gtccatctgg accaactttt
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1380
gtgtacccca tccggttggt acgtgtcaac gaggacacca tggagctgat ccggggggccc
1440
gacggcgtct gcattccctg ccagccaggt gagccgggcc agctggtggg ccgcatcatc
1500
cagaaagacc ccctgcgccg cttcgatggc tacctcaacc agggcgccaa caacaagaag
1560
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1620
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1680
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1740
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1800
gtggccagcc ccactggcaa ctgtgacctg gagcgctttg ctcaggtctt ggagaaggaa
1860
cttcccctgt atgcgcgccc catcttcctg cgcctcctgc ctgagctgca caaaacagga
1920
acctacaagt ccagaagac agagctacgg aaggaggcct ttgacccggc tattgtgaag
1980
acccgctgtt ctatctagat gcagaagggc cgctacgtcc cgctggacca agaggcctac
2040
agccgcatcc aggcaggcaa ggagaagctg tgattccccc catccctctg agggccggcg
2100

4219

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gatgctggat ccggagcccc aggttccgcc ccagagcggt cctggacaag gccagaccaa
2160
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2220
tgactcattg ccttcccaac ccttccagag gctttctgtg aaagtctcat gtccaagttc
2280
cgtcttctgg gctgggcagg ccctcgggtt cccaggctga gactgacggg ttttctcagg
2340
atgatgtctt gggtgagggt agggagagga caaggggtca ccgagccctt cccagagagc
2400
agggagctta taaatggaac cagagcagaa gtccccagac tcaggaagtc aacagagtgg
2460
gcagggacag tggtagcatc catctggtgg ccaaagagaa tcgtagcccc agagctgccc
2520
aagttcactg ggctccaccc ccacctccag gaggggagga gaggacctga catctgaagg
2580
tggcccctga tgccccatct acagcaggag gtcaggacca cgcccctggc ctctccccac
2640
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2700
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2760
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2820
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2880
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2940
gtagcaggta agatgccgca gcccctgcct ccaatgtgct ggttcagccg gggcagtgcc
3000
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3059
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<210> 5040
<211> 616
<212> PRT
<213> Homo sapiens

<400> 5040
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Met Leu Leu Gly Ala Ser Leu Val Gly Val Leu Leu Phe Ser Lys Leu
1               5                  10                  15
Val Leu Lys Leu Pro Trp Thr Gln Val Gly Phe Ser Leu Leu Phe Leu
            20                  25                  30
Tyr Leu Gly Ser Gly Gly Trp Arg Phe Ile Arg Val Phe Ile Lys Thr
        35                  40                  45
Ile Arg Arg Asp Ile Phe Gly Gly Leu Val Leu Lys Val Lys Ala
    50                  55                  60
Lys Val Arg Gln Cys Leu Gln Glu Arg Arg Thr Val Pro Ile Leu Phe
65                  70                  75                  80
Ala Ser Thr Val Arg Arg His Pro Asp Lys Thr Ala Leu Ile Phe Glu
                85                  90                  95
Gly Thr Asp Thr His Trp Thr Phe Arg Gln Leu Asp Glu Tyr Ser Ser
            100                 105                 110
Ser Val Ala Asn Phe Leu Gln Ala Arg Gly Leu Ala Ser Gly Asp Val
```

4220

```
                115                    120                    125
    Ala Ala Ile Phe Met Glu Asn Arg Asn Glu Phe Val Gly Leu Trp Leu
        130                    135                    140
    Gly Met Ala Lys Leu Gly Val Glu Ala Ala Leu Ile Asn Thr Asn Leu
    145                    150                    155                    160
    Arg Arg Asp Ala Leu Leu His Cys Leu Thr Thr Ser Arg Ala Arg Ala
                165                    170                    175
    Leu Val Phe Gly Ser Glu Met Ala Ser Ala Ile Cys Glu Val His Ala
                180                    185                    190
    Ser Pro Asp Pro Ser Leu Ser Leu Phe Cys Ser Gly Ser Trp Glu Pro
                195                    200                    205
    Gly Ala Val Pro Pro Ser Thr Glu His Leu Asp Pro Leu Leu Lys Asp
        210                    215                    220
    Ala Pro Lys His Leu Pro Ser Cys Pro Asp Lys Gly Phe Thr Asp Lys
    225                    230                    235                    240
    Leu Phe Tyr Ile Tyr Thr Ser Gly Thr Thr Gly Leu Pro Lys Ala Ala
                245                    250                    255
    Ile Val Val His Ser Arg Tyr Tyr Arg Met Ala Ala Leu Val Tyr Tyr
                260                    265                    270
    Gly Phe Arg Met Arg Pro Asn Asp Ile Val Tyr Asp Cys Leu Pro Leu
                275                    280                    285
    Tyr His Ser Ala Gly Asn Ile Val Gly Ile Gly Gln Cys Leu Leu His
        290                    295                    300
    Gly Met Thr Val Val Ile Arg Lys Lys Phe Ser Ala Ser Arg Phe Trp
    305                    310                    315                    320
    Asp Asp Cys Ile Lys Tyr Asn Cys Thr Ile Val Gln Tyr Ile Gly Glu
                325                    330                    335
    Leu Cys Arg Tyr Leu Leu Asn Gln Pro Pro Arg Glu Ala Glu Asn Gln
                340                    345                    350
    His Gln Val Arg Met Ala Leu Gly Asn Ala Ser Gly Ser Pro Ser Gly
                355                    360                    365
    Pro Thr Phe Pro Ala Ala Ser Thr Tyr Pro Arg Trp Leu Ser Ser Thr
        370                    375                    380
    Gly Pro Glu Cys Asn Cys Ser Leu Gly Asn Phe Asp Ser Gln Val Gly
    385                    390                    395                    400
    Ala Cys Gly Phe Asn Ser Arg Ile Leu Ser Phe Val Tyr Pro Ile Arg
                405                    410                    415
    Leu Val Arg Val Asn Glu Asp Thr Met Glu Leu Ile Arg Gly Pro Asp
                420                    425                    430
    Gly Val Cys Ile Pro Cys Gln Pro Gly Glu Pro Gly Gln Leu Val Gly
                435                    440                    445
    Arg Ile Ile Gln Lys Asp Pro Leu Arg Arg Phe Asp Gly Tyr Leu Asn
        450                    455                    460
    Gln Gly Ala Asn Asn Lys Lys Ile Ala Lys Asp Val Phe Lys Lys Gly
    465                    470                    475                    480
    Asp Gln Ala Tyr Leu Thr Gly Asp Val Leu Val Met Asp Glu Leu Gly
                485                    490                    495
    Tyr Leu Tyr Phe Arg Asp Arg Thr Gly Asp Thr Phe Arg Trp Lys Gly
                500                    505                    510
    Glu Asn Val Ser Thr Thr Glu Val Glu Gly Thr Leu Ser Arg Leu Leu
                515                    520                    525
    Asp Met Ala Asp Val Ala Val Tyr Gly Val Glu Val Pro Gly Thr Glu
        530                    535                    540
    Gly Arg Ala Gly Met Ala Ala Val Ala Ser Pro Thr Gly Asn Cys Asp
```

```
545                     550                     555                     560
Leu Glu Arg Phe Ala Gln Val Leu Glu Lys Glu Leu Pro Leu Tyr Ala
                        565                     570                     575
Arg Pro Ile Phe Leu Arg Leu Leu Pro Glu Leu His Lys Thr Gly Thr
                    580                     585                     590
Tyr Lys Phe Gln Lys Thr Glu Leu Arg Lys Glu Ala Phe Asp Pro Ala
            595                     600                     605
Ile Val Lys Thr Arg Cys Ser Ile
        610                     615
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```
<210> 5041
<211> 2461
<212> DNA
<213> Homo sapiens
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<400> 5041
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120
gcctgggatc ccggagcctg cctaggttct gtgcgctccc gcccaggccg gtgcccgccg
180
cccgcctgcg ccccaggcag gtcccaggcc tccggctgct cccggccgaa ggtgggggaca
240
ggcagtggca ggcaccacta gcgagggcgt ttgggaaccc agggtgacca cggcgcagcc
300
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360
cccgagtgcg agatcgagcg tcctgagcgc ctgaccgcag ccctggatcg cctgcggcag
420
cgcggcctgg aacagaggtg tctgcggttg tcagcccgcg aggcctcgga agaggagctg
480
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540
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600
cactgcgcgc ggctggccgc aggggctgga ctgcagctgg tggacgctgt gctcactgga
660
gctgtgcaaa atgggcttgc cctggtgagg cctcccgggc accatggcca gagggcggct
720
gccaacgggt tctgcgtgtt caacaacgtg gccatagcag ctgcacatgc caagcagaaa
780
cacgggctac acaggatcct cgtcgtggac tgggatgtgc accatggcca ggggatccag
840
tatctctttg aggatgaccc cagcgtcctt tacttctcct ggcaccgcta tgagcatggg
900
cgcttctggc ctttcctgcg agagtcagat gcagacgcag tggggcgggg acagggcctc
960
ggcttcactg tcaacctgcc ctggaaccag gttgggatgg aaacgctga ctacgtggct
1020
gccttcctgc acctgctgct cccactggcc tttgagtttg accctgagct ggtgctggtc
1080
tcggcaggat ttgactcagc catcggggac cctgaggggc aaatgcaggc cacgccagag
1140
```

```
tgcttcgccc acctcacaca gctgctgcag gtgctggccg gcggccgggt ctgtgccgtg
1200
ctggagggcg gctaccacct ggagtcactg gcggagtcag tgtgcatgac agtacagacg
1260
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1320
gggagtgccc tagagtccat ccagagtgcc cgtgctgccc aggccccgca ctggaagagc
1380
ctccagcagc aagatgtgac cgctgtgccg atgagcccca gcagccactc cccagagggg
1440
aggcctccac ctctgctgcc tgggggtcca gtgtgtaagg cagctgcatc tgcaccgagc
1500
tccctcctgg accagccgtg cctctgcccc gcaccctctg tccgcaccgc tgttgccctg
1560
acaacgccgg atatcacatt ggttctgccc cctgacgtca tccaacagga agcgtcagcc
1620
ctgagggagg agacagaagc ctgggccagg ccacacgagt ccctggcccg ggaggaggcc
1680
ctcactgcac ttgggaagct cctgtacctc ttagatggga tgctggatgg gcaggtgaac
1740
agtggtatag cagccactcc agcctctgct gcagcagcca ccctggatgt ggctgttcgg
1800
agaggcctgt cccacggagc ccagaggctg ctgtgcgtgg ccctgggaca gctggaccgg
1860
cctccagacc tcgcccatga cgggaggagt ctgtggctga acatcagggg caaggaggcg
1920
gctgccctat ccatgttcca tgtctccacg ccactgccag tgatgaccgg tggtttcctg
1980
agctgcatct tgggcttggt gctgcccctg gcctatggct tccagcctga cctggtgctg
2040
gtggcgctgg ggcctggcca tggcctgcag ggcccccacg ctgcactcct ggctgcaatg
2100
cttcgggggc tggcaggggg ccgagtcctg gccctcctgg aggagaactc cacaccccag
2160
ctagcaggga tcctggcccg ggtgctgaat ggagaggcac ctcctagcct aggcccttcc
2220
tctgtggcct ccccagagga cgtccaggcc ctgatgtacc tgagagggca gctggagcct
2280
cagtggaaga tgttgcagtg ccatcctcac ctggtggctt gaaatcggcc aaggtgggag
2340
catttacacc gcagaaatga caccgcacgc cagcgccccg cggccgcgat ccggacccca
2400
agcccacggc tccctcgact ctggggcacg gaaccccgcc cactcccaat ccctggcgcg
2460
c
2461
```

```
<210> 5042
<211> 686
<212> PRT
<213> Homo sapiens

<400> 5042
Arg Gly Arg Leu Gly Thr Gln Gly Asp His Gly Ala Ala Met Gly Thr
```

```
  1                     5                        10                      15
Ala Leu Val Tyr His Glu Asp Met Thr Ala Thr Arg Leu Leu Trp Asp
                20                      25                      30
Asp Pro Glu Cys Glu Ile Glu Arg Pro Glu Arg Leu Thr Ala Ala Leu
            35                      40                      45
Asp Arg Leu Arg Gln Arg Gly Leu Glu Gln Arg Cys Leu Arg Leu Ser
        50                      55                      60
Ala Arg Glu Ala Ser Glu Glu Glu Leu Gly Leu Val His Ser Pro Glu
65                      70                      75                      80
Tyr Val Ser Leu Val Arg Glu Thr Gln Val Leu Gly Lys Glu Glu Leu
                85                      90                      95
Gln Ala Leu Ser Gly Gln Phe Asp Ala Ile Tyr Phe His Pro Ser Thr
                100                     105                     110
Phe His Cys Ala Arg Leu Ala Ala Gly Ala Gly Leu Gln Leu Val Asp
            115                     120                     125
Ala Val Leu Thr Gly Ala Val Gln Asn Gly Leu Ala Leu Val Arg Pro
        130                     135                     140
Pro Gly His His Gly Gln Arg Ala Ala Ala Asn Gly Phe Cys Val Phe
145                     150                     155                     160
Asn Asn Val Ala Ile Ala Ala Ala His Ala Lys Gln Lys His Gly Leu
                165                     170                     175
His Arg Ile Leu Val Val Asp Trp Asp Val His His Gly Gln Gly Ile
            180                     185                     190
Gln Tyr Leu Phe Glu Asp Asp Pro Ser Val Leu Tyr Phe Ser Trp His
        195                     200                     205
Arg Tyr Glu His Gly Arg Phe Trp Pro Phe Leu Arg Glu Ser Asp Ala
    210                     215                     220
Asp Ala Val Gly Arg Gly Gln Gly Leu Gly Phe Thr Val Asn Leu Pro
225                     230                     235                     240
Trp Asn Gln Val Gly Met Gly Asn Ala Asp Tyr Val Ala Ala Phe Leu
                245                     250                     255
His Leu Leu Leu Pro Leu Ala Phe Glu Phe Asp Pro Glu Leu Val Leu
                260                     265                     270
Val Ser Ala Gly Phe Asp Ser Ala Ile Gly Asp Pro Glu Gly Gln Met
            275                     280                     285
Gln Ala Thr Pro Glu Cys Phe Ala His Leu Thr Gln Leu Leu Gln Val
        290                     295                     300
Leu Ala Gly Gly Arg Val Cys Ala Val Leu Glu Gly Gly Tyr His Leu
305                     310                     315                     320
Glu Ser Leu Ala Glu Ser Val Cys Met Thr Val Gln Thr Leu Leu Gly
                325                     330                     335
Asp Pro Ala Pro Pro Leu Ser Gly Pro Met Ala Pro Cys Gln Arg Cys
            340                     345                     350
Glu Gly Ser Ala Leu Glu Ser Ile Gln Ser Ala Arg Ala Ala Gln Ala
        355                     360                     365
Pro His Trp Lys Ser Leu Gln Gln Gln Asp Val Thr Ala Val Pro Met
    370                     375                     380
Ser Pro Ser Ser His Ser Pro Glu Gly Arg Pro Pro Pro Leu Leu Pro
385                     390                     395                     400
Gly Gly Pro Val Cys Lys Ala Ala Ala Ser Ala Pro Ser Ser Leu Leu
                405                     410                     415
Asp Gln Pro Cys Leu Cys Pro Ala Pro Ser Val Arg Thr Ala Val Ala
            420                     425                     430
Leu Thr Thr Pro Asp Ile Thr Leu Val Leu Pro Pro Asp Val Ile Gln
```

                                      4224

```
            435                    440                    445
Gln Glu Ala Ser Ala Leu Arg Glu Glu Thr Glu Ala Trp Ala Arg Pro
    450                    455                    460
His Glu Ser Leu Ala Arg Glu Glu Ala Leu Thr Ala Leu Gly Lys Leu
465                    470                    475                    480
Leu Tyr Leu Leu Asp Gly Met Leu Asp Gly Gln Val Asn Ser Gly Ile
                485                    490                    495
Ala Ala Thr Pro Ala Ser Ala Ala Ala Ala Thr Leu Asp Val Ala Val
             500                    505                    510
Arg Arg Gly Leu Ser His Gly Ala Gln Arg Leu Leu Cys Val Ala Leu
             515                    520                    525
Gly Gln Leu Asp Arg Pro Pro Asp Leu Ala His Asp Gly Arg Ser Leu
    530                    535                    540
Trp Leu Asn Ile Arg Gly Lys Glu Ala Ala Ala Leu Ser Met Phe His
545                    550                    555                    560
Val Ser Thr Pro Leu Pro Val Met Thr Gly Gly Phe Leu Ser Cys Ile
             565                    570                    575
Leu Gly Leu Val Leu Pro Leu Ala Tyr Gly Phe Gln Pro Asp Leu Val
             580                    585                    590
Leu Val Ala Leu Gly Pro Gly His Gly Leu Gln Gly Pro His Ala Ala
             595                    600                    605
Leu Leu Ala Ala Met Leu Arg Gly Leu Ala Gly Gly Arg Val Leu Ala
    610                    615                    620
Leu Leu Glu Glu Asn Ser Thr Pro Gln Leu Ala Gly Ile Leu Ala Arg
625                    630                    635                    640
Val Leu Asn Gly Glu Ala Pro Pro Ser Leu Gly Pro Ser Ser Val Ala
             645                    650                    655
Ser Pro Glu Asp Val Gln Ala Leu Met Tyr Leu Arg Gly Gln Leu Glu
             660                    665                    670
Pro Gln Trp Lys Met Leu Gln Cys His Pro His Leu Val Ala
    675                    680                    685
```

```
<210> 5043
<211> 1824
<212> DNA
<213> Homo sapiens

<400> 5043
gccggtggca cgacagttgc tgcagggaat cttttaaacg agagcgagaa ggactgcggg
60
caggaccggc gggctcctgg ggttcagccg tgccgcctcg ttacgatgac cagtgtggtt
120
aagacagtgt atagcctgca gccccctct gcgctgagcg gcggccagcc ggcagacaca
180
caaactcggg ccacttctaa gagtctctta cctgttaggt ccaaagaagt cgatgtttcc
240
aaacagcttc attcaggagg tccagagaat gatgttacaa aaatcaccaa actgagacga
300
gagaatgggc aaatgaaagc tactgacact gccaccagaa ggaatgtcag aaaaggctac
360
aaaccactga gtaagcaaaa atcagaggaa gagctcaagg acaagaacca gctgttagaa
420
gccgtcaaca agcagttgca ccagaagttg actgaaactc agggagagct gaaggacctg
480
```

4225

```
acccagaagg tagagctgct ggagaagttt cgggacaact gtttggcaat tttggagagc
540
aagggccttg atccagcttt aggcagtgag accctggcat cacgacaaga atccactact
600
gatcacatgg actctatgtt gctgttagaa actttgcaag aggagctgaa gcttttтаac
660
gaaacagcca aaaagcagat ggaggagtta caggccttaa aggtaaagct ggagatgaaa
720
gaggaaagag tccgattcct agaacagcaa accttatgta acaatcaagt aaatgattta
780
acaacagccc ttaaggaaat ggagcagcta ttagaaatgt aagaagaagc aagtggccag
840
atggctccct cttgggcata aaatctcaga ggaagctact taggacatca tcttggccat
900
gatcttctgg gactcaccat ctccagaatg aaaacaattt ctacagtaga cttaaggaca
960
gtttatgctg aaatggcaat tcctcattta agcaagtttt cccaaccttc aggttggtca
1020
gccctcctga gcctcacagg tggataattg aggcctacaa gagaggggag cctaggagct
1080
tggattgacc ttctagtcaa ccacctgact tcagcacacc attacaatcg ggagactaaa
1140
ccaacaacca gaggatctaa aatgtcacat tcagattttc aggaagaaaa tcttcattac
1200
agtggagcac aaatgttcca tacaagacat cattgaggag ccatgctgtc cccttctaac
1260
ctgaaacaca ttctttccca tcctggttgg gcttctgtac ctccttatta atttatgaac
1320
ctgaagttgc ttgaagtgtt ttgggcttaa taaatggggt gaaagtatag gtagcagtaa
1380
cacctacatg aaacaataca ccttggatct tttaatctaa attacttttc ttttttaagt
1440
ctacttttaa aataaatact tctgtaaata ttctgactgt aacattgaga aatgaaaata
1500
gccttttaac ctagatatgt cagttgatca ttattgaact aatttagtta acaagtccaa
1560
gatattctga cttaatctag aatatttttc tgctactctt taagagtcct gtggctagtc
1620
cctctgtctc ccaagagcat tggctagtct cctgagggtg ttgcccattt gtagcagtgg
1680
tttcaccagg tctgtggcca cttgctgccc atgttttccc tgcactccag cctgggtgac
1740
aagagcaaga ctccatctct aaataaataa ataaataaat aaataaataa ataaataaat
1800
aaaatagttg aaatggcaaa cttt
1824
```

```
<210> 5044
<211> 273
<212> PRT
<213> Homo sapiens
```

```
<400> 5044
Ala Gly Gly Thr Thr Val Ala Ala Gly Asn Leu Leu Asn Glu Ser Glu
```

```
   1                5                    10                   15
Lys Asp Cys Gly Gln Asp Arg Arg Ala Pro Gly Val Gln Pro Cys Arg
                20                   25                   30
Leu Val Thr Met Thr Ser Val Val Lys Thr Val Tyr Ser Leu Gln Pro
            35                   40                   45
Pro Ser Ala Leu Ser Gly Gly Gln Pro Ala Asp Thr Gln Thr Arg Ala
        50                   55                   60
Thr Ser Lys Ser Leu Leu Pro Val Arg Ser Lys Glu Val Asp Val Ser
65                   70                   75                   80
Lys Gln Leu His Ser Gly Gly Pro Glu Asn Asp Val Thr Lys Ile Thr
                85                   90                   95
Lys Leu Arg Arg Glu Asn Gly Gln Met Lys Ala Thr Asp Thr Ala Thr
            100                  105                  110
Arg Arg Asn Val Arg Lys Gly Tyr Lys Pro Leu Ser Lys Gln Lys Ser
            115                  120                  125
Glu Glu Glu Leu Lys Asp Lys Asn Gln Leu Leu Glu Ala Val Asn Lys
    130                  135                  140
Gln Leu His Gln Lys Leu Thr Glu Thr Gln Gly Glu Leu Lys Asp Leu
145                  150                  155                  160
Thr Gln Lys Val Glu Leu Leu Glu Lys Phe Arg Asp Asn Cys Leu Ala
                165                  170                  175
Ile Leu Glu Ser Lys Gly Leu Asp Pro Ala Leu Gly Ser Glu Thr Leu
                180                  185                  190
Ala Ser Arg Gln Glu Ser Thr Thr Asp His Met Asp Ser Met Leu Leu
            195                  200                  205
Leu Glu Thr Leu Gln Glu Glu Leu Lys Leu Phe Asn Glu Thr Ala Lys
    210                  215                  220
Lys Gln Met Glu Glu Leu Gln Ala Leu Lys Val Lys Leu Glu Met Lys
225                  230                  235                  240
Glu Glu Arg Val Arg Phe Leu Glu Gln Gln Thr Leu Cys Asn Asn Gln
                245                  250                  255
Val Asn Asp Leu Thr Thr Ala Leu Lys Glu Met Glu Gln Leu Leu Glu
            260                  265                  270
Met
```

```
<210> 5045
<211> 462
<212> DNA
<213> Homo sapiens

<400> 5045
cataaatggg acatttactt cacaagctgt tttcccaggg tcttcctctg ggtatgtctg
60
aaatataaaa atctggactg ggattgaaga ttgtgtttac aaatgctttt gaataggatt
120
tctcctgcag ttgttacgta gcttttcaga aacacacaaa ctacaaataa tgaacaacat
180
ctgcaatgat tcggcagggt ggcagcatcc acgctctcca cccaaaccct ggtgggattt
240
ggagaggccg ctggtgggca gaggttggcc ctaagcatgg cagcctccgg cttactgcac
300
ccagcctgtg gggcggctca gtagcccgtg acatggtggc ctgttgtctc ttctcttgtt
360
```

```
ctagtaagca ctatcctttg tactccctca acgtggcctc catgtggttg aagctaggga
420
gactctacat gggcctggaa cacaaagccg ctagggatga aa
462
```

```
<210> 5046
<211> 92
<212> PRT
<213> Homo sapiens
```

```
<400> 5046
Met Ile Arg Gln Gly Gly Ser Ile His Ala Leu His Pro Asn Pro Gly
 1               5                   10                  15
Gly Ile Trp Arg Gly Arg Trp Trp Ala Glu Val Gly Pro Lys His Gly
                20                  25                  30
Ser Leu Arg Leu Thr Ala Pro Ser Leu Trp Gly Gly Ser Val Ala Arg
                35                  40                  45
Asp Met Val Ala Cys Cys Leu Phe Ser Cys Ser Ser Lys His Tyr Pro
        50                  55                  60
Leu Tyr Ser Leu Asn Val Ala Ser Met Trp Leu Lys Leu Gly Arg Leu
65                  70                  75                  80
Tyr Met Gly Leu Glu His Lys Ala Ala Arg Asp Glu
                85                  90
```

```
<210> 5047
<211> 3380
<212> DNA
<213> Homo sapiens
```

```
<400> 5047
gggtcgcggt cctcggagcg cttctgcagc ccgggcaaag gccggnngct gcgggctctg
60
cagcccttcc aggtggggga cttgctgttc tcctgcccgg cctatgccta cgtgctcacg
120
gtcaacgagc ggggcaacca ctgcgagtac tgcttcacca ggaaagaagg attgtccaaa
180
tgtggaagat gcaagcaggc attttactgc aatgtggagt gtcagaaaga agattggccc
240
atgcacaagc tggaatgttc tcccatggtt gtttttgggg aaaactggaa tccctcggag
300
actgtaagac taacagcaag gattctggcc aaacagaaaa tccacccaga gagaacacct
360
tcggaaaaat tgttagctgt gaaggagttt gaatcacatc tggataagtt agacaatgag
420
aagaaggatt tgattcagag tgacatagct gctctccatc acttttactc caagcatctc
480
gaattccctg acaatgatag cctcgtagta ctctttgcac aggttaactg taatggcttc
540
acaattgaag atgaagaact ttctcatttg ggatcagcga tatttcctga tgttgcattg
600
atgaatcata gctgttgccc caatgtcatt gtgacctaca aagggaccct ggcagaagtc
660
agagctgtac aggaaatcaa gccgggagag gaggttttta ccagctatat tgatctcctg
720
```

```
tacccaacgg aagatagaaa tgaccggtta agagattctt atttctttac ctgtgagtgc
780
caggagtgta ccaccaagga caaggataag gccaaggtgg aaatccggaa gctcagcgat
840
cccccaaagg cagaagccat ccgagacatg gtcagatatg cacgcaacgt cattgaagag
900
ttccggaggg ccaagcacta taaatcccct agtgagctgc tggagatctg cgagctcagc
960
caggagaaga tgagctctgt gtttgaggac agtaacgtgt acatgttgca catgatgtac
1020
caggccatgg gtgtctgctt gtacatgcag gactgggaag gagccctgca atatggacag
1080
aaaatcatta agccctacag taagcactat cctttgtact ccctcaacgt ggcctccatg
1140
tggttgaagc tagggagact ctacatgggc ctggaacaca agccgcagg ggagaaagcc
1200
ctgaagaagg ccattgcaat catggaagta gctcacggca aagatcatcc atatatttct
1260
gagatcaaac aggaaattga aagccactga aactatgcag catttcagtt ttcatttaaa
1320
cacttagttc agaaacctta aaggatttga atatttcaaa ttgcacacgt cactccagca
1380
tctctgtaaa ataattggaa tgaaaatact tcttgcactt aaacactgca catgccgtac
1440
tttgaggtta gtctgaatct tgaactttaa taccaaatta attttgaatg cttttgtttc
1500
ctaagagata atggcatggt ttcatatgtt atactttgga cagacagagt tttaaaaatg
1560
gaattatttt ttctttcatg cctcttgtaa tgttctgaac aaacttgaat gatgaaagta
1620
ttaaagagat atcagtattt gaggtttgta ttttcttctg tctctgggga ggatttctca
1680
gtggtggtgg gagcccagtc ttggagtgaa agtgacacct gctgtccata attcagcaag
1740
ctcaagtctt ctccatggga ctggggtcgg gcagcctctt tattctgcag ttgctcttgt
1800
ggggctgtgc ctgtggagga agaaaatggg aagaaagaga aaaaggtaca caaaggaaag
1860
aaaactatca tctatctgtg gtggaggaac agtccagtga cccaagtgcc ctccagcagg
1920
cgaggttttg aatctgttct ctggtgcctg gtattccttc agtgtgtaaa ggtgcttagt
1980
gcgtgctttg ctttcttggc ttttctgtcc ccatctgtct gaaagcagac ttgccatctc
2040
tcattctgtt gattgttctg tgcagtactc tcctttttgg aaaaactcca gggtatgctt
2100
gggaaggaaa aaaatttttt tccttaccaa ccaacgctgt gttgttgagt aaacactgat
2160
ctctacccac acagacaaca ggaatccagc tttctgcagc cccacagcct agacagcagc
2220
aacctgggga gttgtttgtt agcaaccatt gcacagaagg acgcagcaca cgttcctgag
2280
tgcagggggtg ttactcttag aaaagcgtct tgtagtcgaa agagaggaac ttccccactg
2340
```

```
gttaataagt aaagcctgtt gaaatttaca tgtcaattac ctttcatagt catggtccga
2400
aaacagctag aacagctgta aatctggtac attttccttc cctcctcatc tacacgcacc
2460
cacatcttca cacacactca tgcccctctt tcacacgcag tttgctgcac acagtgggat
2520
ttagcagata gaatgcattc tcttgtcctg tgtagtccaa taagacattt actgaacacc
2580
tggtactatc tatgctaaat gctctgaata gctctctagg tgcaaagaga agagtaaggc
2640
atggtcccag atcagtggaa cttaggtttt aagaatgttc atttactata cattctgtga
2700
cgaagcctaa aataaactta gcctaccatc tctataggtt ttataaaatt tgcaaaagta
2760
atcctttctc agtaaattca agtaatggaa atgtatatga aaaaagtaaa cttctttgtt
2820
cttcaccagt cccactgcgt ggagctaact gccataaaca gtttgcttta tatggtccca
2880
ggttttttcca ttcctggatg atgatgtagc tatataaata gatttagaag aacaaagaca
2940
ggatggtact gacataggat tttgtaacgt gcttctccaa acgaacaaaa tggatctctt
3000
tgcatttcag cacttacaga tttgcctcat tctatttaga ggcagaatat tgcattggat
3060
gcatgtcatc atggactcgg tacttctatt tatggacagg aggttttttt tcccagtttg
3120
ctgctattac aaacaatgcc acaatgaatg atctgaaaca taaaactttg cgttgtgtgg
3180
tagcattttg gggaatagat tcctggaagt gcaatttcaa gatccaatag tgggaatatt
3240
tttaaaattt gaataaatat agccacattt ccttttgtaa aaaaaaaaa aaaactgcat
3300
cagatacaaa taagatagat ataatagtat ttgctttcct ctccctcata acgttgtatt
3360
atcattaaaa tgttttttggc
3380


<210> 5048
<211> 429
<212> PRT
<213> Homo sapiens

<400> 5048
Gly Ser Arg Ser Ser Glu Arg Phe Cys Ser Pro Gly Lys Gly Arg Xaa
1               5                   10                  15
Leu Arg Ala Leu Gln Pro Phe Gln Val Gly Asp Leu Leu Phe Ser Cys
            20                  25                  30
Pro Ala Tyr Ala Tyr Val Leu Thr Val Asn Glu Arg Gly Asn His Cys
            35                  40                  45
Glu Tyr Cys Phe Thr Arg Lys Glu Gly Leu Ser Lys Cys Gly Arg Cys
        50                  55                  60
Lys Gln Ala Phe Tyr Cys Asn Val Glu Cys Gln Lys Glu Asp Trp Pro
65                  70                  75                  80
Met His Lys Leu Glu Cys Ser Pro Met Val Val Phe Gly Glu Asn Trp
```

```
                     85                    90                    95
Asn Pro Ser Glu Thr Val Arg Leu Thr Ala Arg Ile Leu Ala Lys Gln
            100                   105                   110
Lys Ile His Pro Glu Arg Thr Pro Ser Glu Lys Leu Leu Ala Val Lys
            115                   120                   125
Glu Phe Glu Ser His Leu Asp Lys Leu Asp Asn Glu Lys Lys Asp Leu
        130                   135                   140
Ile Gln Ser Asp Ile Ala Ala Leu His His Phe Tyr Ser Lys His Leu
145                   150                   155                   160
Glu Phe Pro Asp Asn Asp Ser Leu Val Val Leu Phe Ala Gln Val Asn
                165                   170                   175
Cys Asn Gly Phe Thr Ile Glu Asp Glu Glu Leu Ser His Leu Gly Ser
            180                   185                   190
Ala Ile Phe Pro Asp Val Ala Leu Met Asn His Ser Cys Cys Pro Asn
            195                   200                   205
Val Ile Val Thr Tyr Lys Gly Thr Leu Ala Glu Val Arg Ala Val Gln
        210                   215                   220
Glu Ile Lys Pro Gly Glu Glu Val Phe Thr Ser Tyr Ile Asp Leu Leu
225                   230                   235                   240
Tyr Pro Thr Glu Asp Arg Asn Asp Arg Leu Arg Asp Ser Tyr Phe Phe
                245                   250                   255
Thr Cys Glu Cys Gln Glu Cys Thr Thr Lys Asp Lys Asp Lys Ala Lys
            260                   265                   270
Val Glu Ile Arg Lys Leu Ser Asp Pro Pro Lys Ala Glu Ala Ile Arg
            275                   280                   285
Asp Met Val Arg Tyr Ala Arg Asn Val Ile Glu Glu Phe Arg Arg Ala
        290                   295                   300
Lys His Tyr Lys Ser Pro Ser Glu Leu Leu Glu Ile Cys Glu Leu Ser
305                   310                   315                   320
Gln Glu Lys Met Ser Ser Val Phe Glu Asp Ser Asn Val Tyr Met Leu
                325                   330                   335
His Met Met Tyr Gln Ala Met Gly Val Cys Leu Tyr Met Gln Asp Trp
            340                   345                   350
Glu Gly Ala Leu Gln Tyr Gly Gln Lys Ile Ile Lys Pro Tyr Ser Lys
            355                   360                   365
His Tyr Pro Leu Tyr Ser Leu Asn Val Ala Ser Met Trp Leu Lys Leu
        370                   375                   380
Gly Arg Leu Tyr Met Gly Leu Glu His Lys Ala Ala Gly Glu Lys Ala
385                   390                   395                   400
Leu Lys Lys Ala Ile Ala Ile Met Glu Val Ala His Gly Lys Asp His
                405                   410                   415
Pro Tyr Ile Ser Glu Ile Lys Gln Glu Ile Glu Ser His
            420                   425
```

<210> 5049
<211> 2422
<212> DNA
<213> Homo sapiens

<400> 5049
nagatcttct cgcagcgcat ctccccttcc atcgattaca cctatgacag cgacatactg
60
aagggcaact tctcaatccg tacagccaag atgcagcagc atgtgtgtga aaccatcatc
120

```
cgcatcttta aaagacatgg agctgttcag ttgtgtactc cactactgct tccccgaaac
180
agacaaatat atgagcacaa cgaatctgcc ctattcatgg accacagcgg gatgctggtg
240
atgcttcctt ttgacctgcg gatcccttt gcaagatatg tggcaagaaa taatatattg
300
aatttaaaac gatactgcat agaacgtgtg ttcaggccgc gcaagttaga tcgatttcat
360
cccaaagaac ttctggagtg tgcatttgat attgtcactt ctaccaccaa cagctttctg
420
cccactgctg aaattatcta cactatctat gaaatcatcc aagagtttcc agcacttcag
480
gaaagaaatt acagtattta tttgaaccat accatgttat tgaaagcaat actcttacac
540
tgtgggatcc cagaagataa actcagtcaa gtctacatta ttctgtatga tgctgtgaca
600
gagaagctga cgaggagaga agtggaagct aaattttgta atctgtctgt gtcttctaat
660
agtnctgtgt cgactctaca angtttattg aacagaaggg agattnntgc aagatcttat
720
gccaacaatn naaattcatt aataaaacag aaaacaggta ttgcacagtt ggtgaagtat
780
ggcttaaaag acctagagga ggttgttgga ctgttgaaga aactcggcat caagttacag
840
gtcttgatca atttgggctt ggtttacaag gtgcagcagc acaatggaat catcttccag
900
tttgtggctt tcatcaaacg aaggcaaagg ctgtacctg aaatcctcgc agctggaggc
960
agatatgacc tgctgattcc ccagtttaga gggccacaag ctctggggcc agttcccact
1020
gccattgggg tcagcatagc tatagacaag atatctgctg ctgtcctcaa catggaggaa
1080
tctgttacaa taagctcttg tgacctcctg gttgtaagtg ttggtcagat gtctatgtcc
1140
agggccatca acctaaccca gaaactctgg acagcaggca tcacagcaga aatcatgtac
1200
gactggtcac agtcccaaga ggaattacaa gagtactgca gacatcatga aatcacctat
1260
gtggcccttg tctcggataa agaaggaagc catgtcaagg ttaagtcttt cgagaaggaa
1320
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1380
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4232

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<212> PRT
<213> Homo sapiens

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Gln His Val Cys Glu Thr Ile Ile Arg Ile Phe Lys Arg His Gly Ala
        35                  40                  45
Val Gln Leu Cys Thr Pro Leu Leu Leu Pro Arg Asn Arg Gln Ile Tyr
    50                  55                  60
Glu His Asn Glu Ser Ala Leu Phe Met Asp His Ser Gly Met Leu Val
65                  70                  75                  80
Met Leu Pro Phe Asp Leu Arg Ile Pro Phe Ala Arg Tyr Val Ala Arg
                85                  90                  95
Asn Asn Ile Leu Asn Leu Lys Arg Tyr Cys Ile Glu Arg Val Phe Arg
                100                 105                 110
Pro Arg Lys Leu Asp Arg Phe His Pro Lys Glu Leu Leu Glu Cys Ala
            115                 120                 125
Phe Asp Ile Val Thr Ser Thr Thr Asn Ser Phe Leu Pro Thr Ala Glu
        130                 135                 140
Ile Ile Tyr Thr Ile Tyr Glu Ile Ile Gln Glu Phe Pro Ala Leu Gln
145                 150                 155                 160
Glu Arg Asn Tyr Ser Ile Tyr Leu Asn His Thr Met Leu Leu Lys Ala
                165                 170                 175
Ile Leu Leu His Cys Gly Ile Pro Glu Asp Lys Leu Ser Gln Val Tyr
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                  180                   185                   190
Ile Ile Leu Tyr Asp Ala Val Thr Glu Lys Leu Thr Arg Arg Glu Val
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Glu Ala Lys Phe Cys Asn Leu Ser Val Ser Ser Asn Ser Xaa Val Ser
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Thr Leu Gln Xaa Leu Leu Asn Arg Arg Glu Ile Xaa Ala Arg Ser Tyr
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Ala Asn Asn Xaa Asn Ser Leu Ile Lys Gln Lys Thr Gly Ile Ala Gln
                 245                   250                   255
Leu Val Lys Tyr Gly Leu Lys Asp Leu Glu Glu Val Val Gly Leu Leu
             260                   265                   270
Lys Lys Leu Gly Ile Lys Leu Gln Val Leu Ile Asn Leu Gly Leu Val
         275                   280                   285
Tyr Lys Val Gln Gln His Asn Gly Ile Ile Phe Gln Phe Val Ala Phe
     290                   295                   300
Ile Lys Arg Arg Gln Arg Ala Val Pro Glu Ile Leu Ala Ala Gly Gly
305                    310                   315                   320
Arg Tyr Asp Leu Leu Ile Pro Gln Phe Arg Gly Pro Gln Ala Leu Gly
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Pro Val Pro Thr Ala Ile Gly Val Ser Ile Ala Ile Asp Lys Ile Ser
             340                   345                   350
Ala Ala Val Leu Asn Met Glu Glu Ser Val Thr Ile Ser Ser Cys Asp
         355                   360                   365
Leu Leu Val Val Ser Val Gly Gln Met Ser Met Ser Arg Ala Ile Asn
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385                    390                   395                   400
Asp Trp Ser Gln Ser Gln Glu Glu Leu Gln Glu Tyr Cys Arg His His
                 405                   410                   415
Glu Ile Thr Tyr Val Ala Leu Val Ser Asp Lys Glu Gly Ser His Val
             420                   425                   430
Lys Val Lys Ser Phe Glu Lys Glu Arg Gln Thr Glu Lys Arg Val Leu
         435                   440                   445
Glu Thr Glu Leu Val Asp His Val Leu Gln Lys Leu Arg Thr Lys Val
     450                   455                   460
Thr Asp Glu Arg Asn Gly Arg Glu Ala Ser Asp Asn Leu Ala Val Gln
465                    470                   475                   480
Asn Leu Lys Gly Ser Phe Ser Asn Ala Ser Gly Leu Phe Glu Ile His
                 485                   490                   495
Gly Ala Thr Val Val Pro Ile Val Ser Val Leu Ala Pro Glu Lys Leu
             500                   505                   510
Ser Ala Ser Thr Arg Arg Arg Tyr Glu Thr Gln Val Gln Thr Arg Leu
         515                   520                   525
Gln Thr Ser Leu Ala Asn Leu His Gln Lys Ser Ser Glu Ile Glu Ile
     530                   535                   540
Leu Ala Val Asp Leu Pro Lys Glu Thr Ile Leu Gln Phe Leu Ser Leu
545                    550                   555                   560
Glu Trp Asp Ala Asp Glu Gln Ala Phe Asn Thr Thr Val Lys Gln Leu
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Leu Ser Arg Leu Pro Lys Gln Arg Tyr Leu Lys Leu Val Cys Asp Glu
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<211> 4125
<212> DNA
<213> Homo sapiens

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1380
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<211> 433
<212> PRT
<213> Homo sapiens

<400> 5052
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            20   25   30
Glu Ser Gly Asp Glu Phe Thr Tyr Gly Asp Val Pro Val Glu Asn Gly
        35   40   45
Met Ala Pro Phe Phe Glu Met Lys Leu Lys His Tyr Lys Ile Phe Glu
    50   55   60
Gly Met Pro Val Thr Phe Thr Cys Arg Val Ala Gly Asn Pro Lys Pro

4237

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65                    70                    75                    80
Lys Ile Tyr Trp Phe Lys Asp Gly Lys Gln Ile Ser Pro Lys Ser Asp
                85                    90                    95
His Tyr Thr Ile Gln Arg Asp Leu Asp Gly Thr Cys Ser Leu His Thr
                100                   105                   110
Thr Ala Ser Thr Leu Asp Asp Asp Gly Asn Tyr Thr Ile Met Ala Ala
                115                   120                   125
Asn Pro Gln Gly Arg Ile Ser Cys Thr Gly Arg Leu Met Val Gln Ala
            130                   135                   140
Val Asn Gln Arg Gly Arg Ser Pro Arg Ser Pro Ser Gly His Pro His
145                   150                   155                   160
Val Arg Arg Pro Arg Ser Arg Ser Arg Asp Ser Gly Asp Glu Asn Glu
                165                   170                   175
Pro Ile Gln Glu Arg Phe Phe Arg Pro His Phe Leu Gln Ala Pro Gly
                180                   185                   190
Asp Leu Thr Val Gln Glu Gly Lys Leu Cys Arg Met Asp Cys Lys Val
                195                   200                   205
Ser Gly Leu Pro Thr Pro Asp Leu Ser Trp Gln Leu Asp Gly Lys Pro
            210                   215                   220
Val Arg Pro Asp Ser Ala His Lys Met Leu Val Arg Glu Asn Gly Val
225                   230                   235                   240
His Ser Leu Ile Ile Glu Pro Val Thr Ser Arg Asp Ala Gly Ile Tyr
                245                   250                   255
Thr Cys Ile Ala Thr Asn Arg Ala Gly Gln Asn Ser Phe Ser Leu Glu
                260                   265                   270
Leu Val Val Ala Ala Lys Glu Ala His Lys Pro Pro Val Phe Ile Glu
                275                   280                   285
Lys Leu Gln Asn Thr Gly Val Ala Asp Gly Tyr Pro Val Arg Leu Glu
            290                   295                   300
Cys Arg Val Leu Gly Val Pro Pro Pro Gln Ile Phe Trp Lys Lys Glu
305                   310                   315                   320
Asn Glu Ser Leu Thr His Ser Thr Asp Arg Val Ser Met His Gln Asp
                325                   330                   335
Asn His Gly Tyr Ile Cys Leu Leu Ile Gln Gly Ala Thr Lys Glu Asp
                340                   345                   350
Ala Gly Trp Tyr Thr Val Ser Ala Lys Asn Glu Ala Gly Ile Val Ser
                355                   360                   365
Cys Thr Ala Arg Leu Asp Val Tyr Thr Gln Trp His Gln Gln Ser Gln
            370                   375                   380
Ser Thr Lys Pro Lys Lys Val Arg Pro Ser Ala Ser Arg Tyr Ala Ala
385                   390                   395                   400
Leu Ser Asp Gln Gly Leu Asp Ile Lys Ala Ala Phe Gln Pro Glu Ala
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Asn Pro Ser His Leu Thr Leu Asn Thr Ala Leu Val Glu Ser Glu Asp
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<210> 5053
<211> 781
<212> DNA
<213> Homo sapiens

<400> 5053

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<210> 5054
<211> 156
<212> PRT
<213> Homo sapiens
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<400> 5054
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Val Gly Pro Cys Pro Lys Met Ser Pro Leu Arg Pro Leu Leu Leu Ala
             20                  25                  30
Leu Ala Leu Ala Ser Val Pro Cys Ala Gln Gly Ala Cys Pro Ala Ser
         35                  40                  45
Ala Asp Leu Lys His Ser Asp Gly Thr Arg Thr Cys Ala Lys Leu Tyr
     50                  55                  60
Asp Lys Ser Asp Pro Tyr Tyr Glu Asn Cys Cys Gly Gly Ala Glu Leu
65                  70                  75                  80
Ser Leu Glu Ser Gly Ala Asp Leu Pro Tyr Leu Pro Ser Asn Trp Ala
                 85                  90                  95
Asn Thr Ala Ser Ser Leu Val Val Ala Pro Arg Cys Glu Leu Thr Val
                100                 105                 110
Trp Ser Arg Gln Gly Lys Ala Gly Lys Thr His Lys Phe Ser Ala Gly
             115                 120                 125
Thr Tyr Pro Arg Leu Glu Glu Tyr Arg Arg Gly Ile Leu Gly Asp Trp
         130                 135                 140
Ser Asn Ala Ile Ser Ala Leu Tyr Cys Arg Cys Ser
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145   150   155

<210> 5055
<211> 2520
<212> DNA
<213> Homo sapiens

<400> 5055
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1140
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1260
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1320
aagatgcaga ttcctacact tcttcaagaa ccactttcca attccttaaa aatttcagat
1380

4240

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2520

<210> 5056
<211> 672
<212> PRT
<213> Homo sapiens

<400> 5056
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            20   25   30
Asp Val Thr Val Ile Val Glu Asp Arg Lys Phe Arg Ala His Lys Asn
            35   40   45
Ile Leu Ser Ala Ser Ser Thr Tyr Phe His Gln Leu Phe Ser Val Ala
        50   55   60
Gly Gln Val Val Glu Leu Ser Phe Ile Arg Ala Glu Ile Phe Ala Glu

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65                      70                      75                      80
Ile Leu Asn Tyr Ile Tyr Ser Ser Lys Ile Val Arg Val Arg Ser Asp
                85                      90                      95
Leu Leu Asp Glu Leu Ile Lys Ser Gly Gln Leu Leu Gly Val Lys Phe
            100                     105                     110
Ile Ala Glu Leu Gly Val Pro Leu Ser Gln Val Lys Ser Ile Ser Gly
            115                     120                     125
Thr Ala Gln Asp Gly Asn Thr Glu Pro Leu Pro Pro Asp Ser Gly Asp
        130                     135                     140
Lys Asn Leu Val Ile Gln Lys Ser Lys Asp Glu Ala Gln Asp Asn Gly
145                     150                     155                     160
Ala Thr Ile Met Pro Ile Ile Thr Glu Ser Phe Ser Leu Ser Ala Glu
                165                     170                     175
Asp Tyr Glu Met Lys Lys Ile Ile Val Thr Asp Ser Asp Asp Asp Asp
                180                     185                     190
Asp Asp Val Ile Phe Cys Ser Glu Ile Leu Pro Thr Lys Glu Thr Leu
            195                     200                     205
Pro Ser Asn Asn Thr Val Ala Gln Val Gln Ser Asn Pro Gly Pro Val
    210                     215                     220
Ala Ile Ser Asp Val Ala Pro Ser Ala Ser Asn Asn Ser Pro Pro Leu
225                     230                     235                     240
Thr Asn Ile Thr Pro Thr Gln Lys Leu Pro Thr Pro Val Asn Gln Ala
                245                     250                     255
Thr Leu Ser Gln Thr Gln Gly Ser Glu Lys Leu Leu Val Ser Ser Ala
            260                     265                     270
Pro Thr His Leu Thr Pro Asn Ile Ile Leu Leu Asn Gln Thr Pro Leu
            275                     280                     285
Ser Thr Pro Pro Asn Val Ser Ser Ser Leu Pro Asn His Met Pro Ser
    290                     295                     300
Ser Ile Asn Leu Leu Val Gln Asn Gln Gln Thr Pro Asn Ser Ala Ile
305                     310                     315                     320
Leu Thr Gly Asn Lys Ala Asn Glu Glu Glu Glu Glu Glu Ile Ile Asp
                325                     330                     335
Asp Asp Asp Asp Thr Ile Ser Ser Ser Pro Asp Ser Ala Val Ser Asn
            340                     345                     350
Thr Ser Leu Val Pro Gln Ala Asp Thr Ser Gln Asn Thr Ser Phe Asp
        355                     360                     365
Gly Ser Leu Ile Gln Lys Met Gln Ile Pro Thr Leu Leu Gln Glu Pro
    370                     375                     380
Leu Ser Asn Ser Leu Lys Ile Ser Asp Ile Ile Thr Arg Asn Thr Asn
385                     390                     395                     400
Asp Pro Gly Val Gly Ser Lys His Leu Met Glu Gly Gln Lys Ile Ile
                405                     410                     415
Thr Leu Asp Thr Ala Thr Glu Ile Glu Gly Leu Ser Thr Gly Cys Lys
            420                     425                     430
Val Tyr Ala Asn Ile Gly Glu Asp Thr Tyr Asp Ile Val Ile Pro Val
            435                     440                     445
Lys Asp Asp Pro Asp Glu Gly Glu Ala Arg Leu Glu Asn Glu Ile Pro
    450                     455                     460
Lys Thr Ser Gly Ser Glu Met Ala Asn Lys Arg Met Lys Val Lys His
465                     470                     475                     480
Asp Asp His Tyr Glu Leu Ile Val Asp Gly Arg Val Tyr Tyr Ile Cys
                485                     490                     495
Ile Val Cys Lys Arg Ser Tyr Val Cys Leu Thr Ser Leu Arg Arg His
```

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                    500                    505                    510
Phe Asn Ile His Ser Trp Glu Lys Lys Tyr Pro Cys Arg Tyr Cys Glu
            515                    520                    525
Lys Val Phe Pro Leu Ala Glu Tyr Arg Thr Lys His Glu Ile His His
        530                    535                    540
Thr Gly Glu Arg Arg Tyr Gln Cys Leu Ala Cys Gly Lys Ser Phe Ile
545                    550                    555                    560
Asn Tyr Gln Phe Met Ser Ser His Ile Lys Ser Val His Ser Gln Asp
                565                    570                    575
Pro Ser Gly Asp Ser Lys Leu Tyr Arg Leu His Pro Cys Arg Ser Leu
                580                    585                    590
Gln Ile Arg Gln Tyr Ala Tyr His Ser Asp Arg Ser Ser Thr Ile Pro
            595                    600                    605
Ala Met Lys Asp Asp Gly Ile Gly Tyr Lys Val Asp Thr Gly Lys Glu
        610                    615                    620
Pro Pro Val Gly Thr Thr Thr Ser Thr Gln Asn Lys Pro Met Thr Trp
625                    630                    635                    640
Glu Asp Ile Phe Ile Gln Gln Glu Asn Asp Ser Ile Phe Lys Gln Asn
                645                    650                    655
Val Thr Asp Gly Ser Thr Glu Phe Glu Phe Ile Ile Pro Glu Ser Tyr
                660                    665                    670
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<210> 5057
<211> 673
<212> DNA
<213> Homo sapiens

<400> 5057
nnggcggcgc agctattgct ggacggccag tgggagagcg aggcctgagc ctctgcgtct
60
aggatcaaaa tggtttcaat cccagaatac tatgaaggca gaacgtcct cctcacagga
120
gctaccggtt ttctagggaa ggtgcttctg gaaaagttgc tgaggtcttg tcctaaggtg
180
aattcagtat atgttttggt gaggcagaaa gctggacaga caccacaaga gcgagtggaa
240
gaagtcctta gtggcaagct ttttgacaga ttgagagatg aaaatccaga ttttagagag
300
aaaattatag caatcaacag cgaactcacc caacctaaac tggctctcag tgaagaagat
360
aaagaggtga tcatagattc taccaatatt atattccact gtgcagctac agtaaggttt
420
aatgaaaatt taaggtaagt acaagtaatt atataatatt tgaacttcag tatagttatt
480
aaaaaatctc attttaattc tacttttag tcaatttgtt ttgaatgtga tttgatacta
540
tttgcctatg ttaactgtgg ctttcagtgt cctacagagt gttaaaagaa ttctcttctt
600
cttctcagtt taaaaatctt ggataactaa tacatgttta ttggaagaag ttgccatgaa
660
tttaaacatg cat
673

<210> 5058
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<211> 122
<212> PRT
<213> Homo sapiens

<400> 5058
Met Val Ser Ile Pro Glu Tyr Tyr Glu Gly Lys Asn Val Leu Leu Thr
1   5   10   15
Gly Ala Thr Gly Phe Leu Gly Lys Val Leu Leu Glu Lys Leu Leu Arg
            20   25   30
Ser Cys Pro Lys Val Asn Ser Val Tyr Val Leu Val Arg Gln Lys Ala
        35   40   45
Gly Gln Thr Pro Gln Glu Arg Val Glu Glu Val Leu Ser Gly Lys Leu
     50   55   60
Phe Asp Arg Leu Arg Asp Glu Asn Pro Asp Phe Arg Glu Lys Ile Ile
65   70   75   80
Ala Ile Asn Ser Glu Leu Thr Gln Pro Lys Leu Ala Leu Ser Glu Glu
                85   90   95
Asp Lys Glu Val Ile Ile Asp Ser Thr Asn Ile Ile Phe His Cys Ala
            100   105   110
Ala Thr Val Arg Phe Asn Glu Asn Leu Arg
            115   120

<210> 5059
<211> 480
<212> DNA
<213> Homo sapiens

<400> 5059
ctcgagaact gaaagacact ctctatgggt taagccaccc agtgcatggt atcttgttat
60
aactgcccga gctgactgag acggacgttc aggacagaga gcgtgaatgc atagtgacac
120
cagctgtgag tctttctcca gggacagtcg gcagccggcc ctaggtgcag agccgatgac
180
aaggacccag gctctcagca ggtcttccaa gcagtgtggt agaaaggcag gcagggtgtg
240
gggaagtgga gccaggccac cagtcatgat gtcaagactg agccaggaag caaaggcagg
300
cagagagatg gggaggagag ggagcaggag gggactggcc atctctgaga cagaagcgtg
360
agtagtgggt ggacttgagg gcaggagagg actgaaaggg cagaggcctg ggcgatgcag
420
ccagagaggg agatgctggt gtggggaggt ctgggcaggg atgttttagg tgatggcaga
480

<210> 5060
<211> 114
<212> PRT
<213> Homo sapiens

<400> 5060
Met Ala Ser Pro Leu Leu Leu Pro Leu Leu Pro Ile Ser Leu Pro Ala
1   5   10   15
Phe Ala Ser Trp Leu Ser Leu Asp Ile Met Thr Gly Gly Leu Ala Pro

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                  20                  25                  30
Leu Pro His Thr Leu Pro Ala Phe Leu Pro His Cys Leu Glu Asp Leu
         35                  40                  45
Leu Arg Ala Trp Val Leu Val Ile Gly Ser Ala Pro Arg Ala Gly Cys
      50                  55                  60
Arg Leu Ser Leu Glu Lys Asp Ser Gln Leu Val Ser Leu Cys Ile His
65                  70                  75                  80
Ala Leu Cys Pro Glu Arg Pro Ser Gln Ser Ala Arg Ala Val Ile Thr
                85                  90                  95
Arg Tyr His Ala Leu Gly Gly Leu Thr His Arg Glu Cys Leu Ser Val
            100                 105                 110
Leu Glu
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<210> 5061
<211> 2462
<212> DNA
<213> Homo sapiens

<400> 5061

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gcggccgcca attttttttt tttttttttt tttttttaa aaaggcccaa aactttattt
60
agttttcagg gaaatataag atgcatgtaa acataaaata caaaacaaaa cccaaatctt
120
acagtctaga agcatgccaa gacagagcat tttctgcaga ccaaagagtc ccgtcaaagt
180
gataaaggac acctggaaag tggcaggcca aggggctggt cccttcccca agggcactgc
240
attttgtga tgagattaaa aacaaaccaa ctccactatt aaaaatgcta gaaacatgga
300
gatagtttag caccaccatt gattctggaa atatttcagc actcaaatcg actgcactga
360
gtttaatgtc ctttctccag tttctctgct gaggaggaaa gaaggaaaac ctggaggaag
420
ggctcctcct gaccccacag agcccactaa gagctgggag gggaattcca tgaggaattc
480
tccaaggttc tggagctcca gagacatcca ccagtcccca cccagccatg cagtccacat
540
gctcacgctt cagggattac tgaagtctgc cttgcccggg agtcacttcc tgcagacctc
600
tgagtacctg gtggggaaac ccatttccca tcctgtgtct ggatttaaa gaaaacctgt
660
tggagataat gagttgtaaa ttcaaggagg gtggctgttt tgctgttctt tctctgcagt
720
aaactcttat ggggagtgtg ccttggttat aaggcaacgc aaaatggtag ggtatatcca
780
tggatgaatg ttcatcacac ccaatctaat tcataccagg tggcaggctc agcaaactga
840
accaccacag gtgtcagaga tacttgagaa tgactggtac caacaagacg acaaaggagg
900
ttgccttcct cccagatgtg cccaatggag tctgaactct ggttctaatt tgtggaggtg
960
ggtccctact gtatgaccca ttgtggtcac tgctctttga gccatacaac ttgagagact
1020
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4245

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ggctttggat tggacagtca aagggaagtg ggcaaaacca gctgagaacc cgggagctgg
1080
atgcatatat tctggaatca gggcctgcaa actcaaagat tggtttgtgg ctggtgactt
1140
ctctctgcta agtaaatcaa tgaccattca ttgagaactg atggggaccc agcgtgtggc
1200
ccaatgagtg gcagtttttt cctagccagc ttctgtggcc aaatttggag gattttccaa
1260
cctgctatgg ctggaccctt gggtgttaaa tcactaaatt ccctttctac ctgctctctt
1320
cttcctgaaa cactcagagc tgacttcttc cttctttcta atcaacaaag acaaaactcc
1380
aagccccttt tcagccttca cacaattttt ctttctagaa gacatccgct tctggaagcc
1440
tccttcccta atgaagggac agtaggcccc agctacccca aacatgcaca tgctcttctc
1500
accaacgtgc ctctcacttg cctctaacgt gctcgagcca tccttttgtt ctaaataatt
1560
cttcctccct ccctcccttt tttctctttc acctcttgag gcgcagccta ttggccagga
1620
tggaactggg agcaaggcgg ggaccttcag tgcagggac cccattctct aaggccactg
1680
agttctagga ctggagtagg agagggtgct gttgtcaagg ttaagtgcaa acttgagatt
1740
ttaaaaagac aggattgggg aagggggatt gcatgctaat cccaacctta taggcaggct
1800
gggatcaaga ccttggaagg tagggctctc cacccagtct gtaagcacca gtgtgcccac
1860
cttatggcct ggggacccag gtttgcagga gggaagttaa cagtggggct gtttttcccc
1920
aaagctgtgg gtcactgatc ctgtcttctc actggctctg atcatgcagc ttgggaacca
1980
cagagacatg agactgcacc aaacagggct gatgatttag ccagaaactc aggaaggtct
2040
agcacagccc tccacacact tcccaggaag tgtttggtct ggccctgcag ttgggactaa
2100
acttatatgc acctgcaggt cttgttgggt gcaccgtgag caagttctca ccccaaccac
2160
ctgacccacc ctctgaaaca aggacgaaag ggctggcagc tttcattata aggggcttct
2220
catacccatg gcatggctga ggggtgggag tcagcctgct cgatgacacg tctgcagggg
2280
atgacctaac tgaaccaact cagtgtttct attcccagtg gcatctcttt tgcacatctt
2340
cattttggag cctgggatga ctgcctaggc cacttatgct agacctgtta atgccagtgt
2400
gaaatttcca actaaatact taataaaata attacaaaaa gaaaaaaaaa tgacacattg
2460
ca
2462
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<210> 5062
<211> 136
<212> PRT
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<213> Homo sapiens

<400> 5062
Met Ala Gly Trp Gly Leu Val Asp Val Ser Gly Ala Pro Glu Pro Trp
1   5   10   15
Arg Ile Pro His Gly Ile Pro Leu Pro Ala Leu Ser Gly Leu Cys Gly
            20   25   30
Val Arg Arg Ser Pro Ser Ser Arg Phe Ser Phe Phe Pro Pro Gln Gln
        35   40   45
Arg Asn Trp Arg Lys Asp Ile Lys Leu Ser Ala Val Asp Leu Ser Ala
    50   55   60
Glu Ile Phe Pro Glu Ser Met Val Val Leu Asn Tyr Leu His Val Ser
65   70   75   80
Ser Ile Phe Asn Ser Gly Val Gly Leu Phe Leu Ile Ser Ser Gln Lys
                85   90   95
Cys Ser Ala Leu Gly Glu Gly Thr Ser Pro Leu Ala Cys His Phe Pro
            100   105   110
Gly Val Leu Tyr His Phe Asp Gly Thr Leu Trp Ser Ala Glu Asn Ala
        115   120   125
Leu Ser Trp His Ala Ser Arg Leu
    130   135

<210> 5063
<211> 561
<212> DNA
<213> Homo sapiens

<400> 5063
gacgcaaccc cagtgtcaaa ccaggggta agtcaaggta tccggccagg cgccggcagc
60
tgagggggcc cagtggggtc tcgtctgtgg cccagagacg tggcggaaga aggcagtaca
120
tctcccttct tagagagaga gtggaagctt ctgagtgtgg cttgggtcgt tctgaaccat
180
ggtgacgttt ccaccctgcc actgcctgtc ttccagtttg acttgctgga aatggaccgg
240
ctggagaggc cactggttga cctgccgctc ctcctggacc cgccctccta cgtgcccgac
300
acggtggacc tcaccgatga cgctctggcc cgaaaatact ggctcacctg ctttgaggag
360
gccctggacg gggtagtgaa gcgcgcagtg gcgagccagc cagactctgt ggatgcagcc
420
gagagggcgg agaagttccg gcagaagtac tggaacaagc ttcagaccct gaggcagcag
480
cccttcgcct atgggaccct gaccgtgcgc agcctgctgg acaccaggga gcactgtctg
540
aacgagttca acttccccgga t
561

<210> 5064
<211> 110
<212> PRT
<213> Homo sapiens

<400> 5064
Met Asp Arg Leu Glu Arg Pro Leu Val Asp Leu Pro Leu Leu Leu Asp
1   5   10   15
Pro Pro Ser Tyr Val Pro Asp Thr Val Asp Leu Thr Asp Asp Ala Leu
            20   25   30
Ala Arg Lys Tyr Trp Leu Thr Cys Phe Glu Glu Ala Leu Asp Gly Val
        35   40   45
Val Lys Arg Ala Val Ala Ser Gln Pro Asp Ser Val Asp Ala Ala Glu
    50   55   60
Arg Ala Glu Lys Phe Arg Gln Lys Tyr Trp Asn Lys Leu Gln Thr Leu
65   70   75   80
Arg Gln Gln Pro Phe Ala Tyr Gly Thr Leu Thr Val Arg Ser Leu Leu
            85   90   95
Asp Thr Arg Glu His Cys Leu Asn Glu Phe Asn Phe Pro Asp
            100   105   110

<210> 5065
<211> 370
<212> DNA
<213> Homo sapiens

<400> 5065
attgaggacg cgcgggagcg aatgaggacg ctgcggaagc tgatccggga tctcccagga
60
cactactatg aaacgctcaa attccttgtg ggccatctca agaccatcgc tgaccactct
120
gagaaaaaca agatggaacc ccggaacctg gccctggtct ttgggccgac actggtgagg
180
acgtctgagg acaacatgac agacatggtg acccacatgc ctgaccgcta caagatcgtg
240
gagacactga tccagcactc agactggttc ttcagtgacg aagaggacaa gggagagaga
300
attctaccac ctgtagttca gtcaagtcca agggttcgtg ggcccccaag aaggagccgt
360
acgcccgggc
370

<210> 5066
<211> 123
<212> PRT
<213> Homo sapiens

<400> 5066
Ile Glu Asp Ala Arg Glu Arg Met Arg Thr Leu Arg Lys Leu Ile Arg
1   5   10   15
Asp Leu Pro Gly His Tyr Tyr Glu Thr Leu Lys Phe Leu Val Gly His
            20   25   30
Leu Lys Thr Ile Ala Asp His Ser Glu Lys Asn Lys Met Glu Pro Arg
        35   40   45
Asn Leu Ala Leu Val Phe Gly Pro Thr Leu Val Arg Thr Ser Glu Asp
    50   55   60
Asn Met Thr Asp Met Val Thr His Met Pro Asp Arg Tyr Lys Ile Val
65   70   75   80
Glu Thr Leu Ile Gln His Ser Asp Trp Phe Phe Ser Asp Glu Glu Asp

```
                     85                  90                  95
    Lys Gly Glu Arg Ile Leu Pro Pro Val Val Gln Ser Ser Pro Arg Val
                100                 105                 110
    Arg Gly Pro Pro Arg Arg Ser Arg Thr Pro Gly
            115                 120
```

<210> 5067
<211> 2023
<212> DNA
<213> Homo sapiens

<400> 5067
gctgaggcac aacatgatcg agagcttcgg nagcttgaac agagggtctc cctccggagg
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gcactcttag aacaaaagat tgaagaagag atgttggctt tgcagaatga gcgcacagaa
120
cgaatacgaa gcctgttgga acgtcaagcc agagagattg aagcttttga ctctgaaagc
180
atgagactag gttttagtaa tatggtcctt tctaatctct cccctgaggc attcagccac
240
agctacccgg gagcttctgg ttggtcacac aaccctactg ggggtccagg acctcactgg
300
ggtcatccca tgggtggccc accacaagct tggggccatc caatgcaagg tggaccccag
360
ccatggggtc acccttcagg gccaatgcaa ggggtacctc gaggtagcag tatgggagtc
420
cgcaatagcc cccaggctct gaggcggaca gcttctgggg gacggacaga gcagggcatg
480
agcagaagca cgagtgtcac ttcacaaata tccaatgggt cacacatgtc ttatacataa
540
cttaataatt gagagtggca attccgctgg agctgtctgc caaaagaaac tgcctacaga
600
catcatcaca gcagcctcct cacttgggta ctacagtgtg gaagctgagt gcatatggta
660
tattttattc atttttgtaa agcgttctgt tttgggttta ctaattggga tgtcatagta
720
cttggctgcc gggtttgttt gttttggggg aaattttgaa aagtggagtt gatattaaaa
780
ataaatgtgt atgtgtgtac atatatatac acacacatac acatatatta tgcatgtggt
840
gaaaagaatt ggctagatag gggatttttc tgaacactgc aaaaatagaa cgtagcaaaa
900
tggcttcagt tatcactttt gggtgtctgt atcctaagaa gtttctgaaa agatctaaag
960
ccttttatc ccatatccca aattcttatg agccactcac agcaggcagc atatgttgaa
1020
ataagttatt actggtacac acctgcattg cctcaccagt gtatttattt gttattaaat
1080
tgatctgact tctcagcctc atttggacta aaaaaagaaa gcagaaatcc atgaacacat
1140
tgcttctcgg ccttttggct aagatcaagt gtagaaatcc atgaacacta aaggacttca
1200
ttgatttttt cagagagtag aaaacaactt agttttttctt ttttcctgaa tgcgtcatag
1260
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```
gcttgtgagt gatttttgtc cattcaattg tgccttcttt gtattatgat aagatggggg
1320
tacttaagga gatcacaagt tgtgtgagga ttgcattaac aaacctatga gccttcaatg
1380
gggaagacca gaagggtgag aggggccctg aaagttcata tggtgggtat gtcccgcagc
1440
agagtgagga gatgaagctt acgtgtcctg acgttttgtt gcttatactg tgatatctca
1500
tcctagctaa gctctataat gcccaagacc ccaaacagta cttttacttt gtttgtacaa
1560
aaacaaagac atatagccaa tacaaatcaa atgccggagg tgtttgatgc catatttgca
1620
aattgccatc tattgaaatt ctcgtcacac tacatagaca taattgttat ctccttttgg
1680
cttatgtgat tttctgttta caagtagaat agccaattat ttaaatgttt agttgccaca
1740
gtgaaccagg agtcactgag ccaatgactt taccagctgc tgactaatct tcatcaccac
1800
tgtagatttt gctgcatgtg caggtcctct atttttaatt gctgttttcg ttgctgcagt
1860
actttacaaa cttctagttc gttgagactt agtgaccatt tggcatcaag ttaacatcac
1920
acaataggaa acaccacttc cacaagtctc aagcctcagt gctaaagtac tactgaaaag
1980
gaactaggaa gtttggccaa ttaaaaaaaa aaaaaagtcg acc
2023


<210> 5068
<211> 179
<212> PRT
<213> Homo sapiens

<400> 5068
Ala Glu Ala Gln His Asp Arg Glu Leu Arg Xaa Leu Glu Gln Arg Val
1               5                   10                  15
Ser Leu Arg Arg Ala Leu Leu Glu Gln Lys Ile Glu Glu Glu Met Leu
            20                  25                  30
Ala Leu Gln Asn Glu Arg Thr Glu Arg Ile Arg Ser Leu Leu Glu Arg
        35                  40                  45
Gln Ala Arg Glu Ile Glu Ala Phe Asp Ser Glu Ser Met Arg Leu Gly
    50                  55                  60
Phe Ser Asn Met Val Leu Ser Asn Leu Ser Pro Glu Ala Phe Ser His
65                  70                  75                  80
Ser Tyr Pro Gly Ala Ser Gly Trp Ser His Asn Pro Thr Gly Gly Pro
                85                  90                  95
Gly Pro His Trp Gly His Pro Met Gly Gly Pro Pro Gln Ala Trp Gly
                100                 105                 110
His Pro Met Gln Gly Gly Pro Gln Pro Trp Gly His Pro Ser Gly Pro
            115                 120                 125
Met Gln Gly Val Pro Arg Gly Ser Ser Met Gly Val Arg Asn Ser Pro
        130                 135                 140
Gln Ala Leu Arg Arg Thr Ala Ser Gly Gly Arg Thr Glu Gln Gly Met
145                 150                 155                 160
Ser Arg Ser Thr Ser Val Thr Ser Gln Ile Ser Asn Gly Ser His Met
```

4250

                        165   170   175
        Ser Tyr Thr

        <210> 5069
        <211> 3655
        <212> DNA
        <213> Homo sapiens

        <400> 5069
        ntttttttttt tttttttttt tttggaagtc ctgagttgag gcttgcggga tcctttccgg
        60
        agaaagcgca ggctaaagcc gcaggtgaag atgtccaact acgcgaacga catgtggccg
        120
        ggctcgccgc aggagaagga ttcgccctcg acctcgcggt cgggcgggtc cagccggctg
        180
        tcgtcgcggt ctaggagccg ctcttttttcc agaagctctc ggtcccattc ccgcgtctcg
        240
        agccggtttt cgtccaggag tcggaggagc aagtccaggt cccgttcccg aaggcgccac
        300
        cagcggaagt acaggcgcta ctcgcggtca tactcgcgga gccggtcgcg atcccgcagc
        360
        cgccgttacc gagagaggcg ctacgggttc accaggagat actaccggtc tccttcgcgg
        420
        taccggtccc ggtcccgtag caggtcgcgc tctcggggaa ggtcgtactg cggaagggcg
        480
        tacgcgatcg cgcggggaca gcgctactac ggctttggtc gcacagtgta cccggaggag
        540
        cacagcagat ggagggacag atccaggacg aggtcgcgga gcagaacccc ctttcgctta
        600
        agtgaaaaag gtgggtgggt catttacctt tccatttgtg gtaatgtatg gtggcagtat
        660
        atgagtaggc tagggaacca acgttgctgt gtagtttcaa tattagttcc tttagtgccc
        720
        gaaatctttt tggaggaaag agggaggaca ttacctgtat ttaagtggac agcattctct
        780
        ttagggttaa aggtcaactg gaagttaaat ggctcaggat gtagggaact ttttttccta
        840
        ttggctgact gttcttagtg ggtggagcct tttaaatgtt atgattaagt taaaggttct
        900
        aagttaacgt gattgggaag aacaatatca aaacacgcct tcttttagtt gacattatta
        960
        ctgaataaaa ttggattgtc gagtatccta agtgacctag gaggccgggc gcggcggctc
        1020
        acctctgtaa tcccagcact ggggaggcg gaggcggagg cgggtgggtc acttgaggcc
        1080
        aggcgttcca caccagccag gccaacatag ctcactatct agtaaaagta caaaaattag
        1140
        ccggggggtgg cggtagaaat acactttagt agtgtatcag tattggttca gtggttgtga
        1200
        taattatata aagaatctac agcagaaaaa cctggttttc agaaatacat ctttgaagag
        1260
        aaagcaaaat aatatcacta ttagctagag aaaattaagt acaacaaaaa gacaaaataa
        1320

                                        4251

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1380
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4252

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<210> 5070
<211> 255
<212> PRT
<213> Homo sapiens

<400> 5070
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            20                  25                  30
Arg Ser Arg Ser Arg Ser Phe Ser Arg Ser Ser Arg Ser His Ser Arg
            35                  40                  45
Val Ser Ser Arg Phe Ser Ser Arg Ser Arg Arg Ser Lys Ser Arg Ser
        50                  55                  60
Arg Ser Arg Arg Arg His Gln Arg Lys Tyr Arg Arg Tyr Ser Arg Ser
65                  70                  75                  80
Tyr Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg Arg Tyr Arg Glu Arg
                85                  90                  95
Arg Tyr Gly Phe Thr Arg Arg Tyr Tyr Arg Ser Pro Ser Arg Tyr Arg
            100                 105                 110
Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg Gly Arg Ser Tyr Cys Gly
        115                 120                 125
Arg Ala Tyr Ala Ile Ala Arg Gly Gln Arg Tyr Tyr Gly Phe Gly Arg
        130                 135                 140
Thr Val Tyr Pro Glu Glu His Ser Arg Trp Arg Asp Arg Ser Arg Thr
145                 150                 155                 160
Arg Ser Arg Ser Arg Thr Pro Phe Arg Leu Ser Glu Lys Gly Gly Trp
                165                 170                 175
Val Ile Tyr Leu Ser Ile Cys Gly Asn Val Trp Trp Gln Tyr Met Ser
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                 180                    185                    190
     Arg Leu Gly Asn Gln Arg Cys Cys Val Val Ser Ile Leu Val Pro Leu
             195                    200                    205
     Val Pro Glu Ile Phe Leu Glu Glu Arg Gly Arg Thr Leu Pro Val Phe
         210                    215                    220
     Lys Trp Thr Ala Phe Ser Leu Gly Leu Lys Val Asn Trp Lys Leu Asn
     225                    230                    235                    240
     Gly Ser Gly Cys Arg Glu Leu Phe Phe Leu Leu Ala Asp Cys Ser
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<210> 5071
<211> 2196
<212> DNA
<213> Homo sapiens

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1140
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2196

<210> 5072
<211> 76
<212> PRT
<213> Homo sapiens

<400> 5072
Met Glu Ser His Ser Val Thr Gln Ala Gly Val Gln Cys Arg Asp Leu
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Gly Ser Leu Gln Pro Pro Pro Arg Phe Lys Gln Phe Ser His Leu
            20   25   30
Ser Leu Gln Ser Ser Trp Asp Tyr Arg His Ala Gln Pro Cys Pro Ala
        35   40   45
Asn Phe Cys Asn Phe Ser Arg Asp Gly Phe Ser Leu Ser Arg Asp Gly
        50   55   60
Cys Leu Pro Gly Trp Ser Arg Thr Pro Asp Leu Arg
65   70   75

<210> 5073
<211> 1712
<212> DNA
<213> Homo sapiens

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4256

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<210> 5074
<211> 240
<212> PRT
<213> Homo sapiens

<400> 5074
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                20   25   30
Met Asp Lys Glu Thr Phe Glu Phe Lys Phe Gly Lys Glu Leu Thr Phe
            35   40   45
Thr Thr Val Leu Ser Asp Gln Gln Val Val Glu Leu Ile Pro Gly Gly
        50   55   60
Ala Gly Ile Val Val Gly Tyr Gly Asp Arg Ser Arg Phe Ile Gln Leu
65   70   75   80
Val Gln Lys Ala Arg Leu Glu Glu Ser Lys Glu Gln Val Ala Ala Met
                85   90   95
Gln Ala Gly Leu Leu Lys Val Val Pro Gln Ala Val Leu Asp Leu Leu
            100   105   110
Thr Trp Gln Glu Leu Glu Lys Lys Val Cys Gly Asp Pro Glu Val Thr
            115   120   125
Val Asp Ala Leu Arg Lys Leu Thr Arg Phe Glu Asp Phe Glu Pro Ser
        130   135   140
Asp Ser Arg Val Gln Tyr Phe Trp Glu Ala Leu Asn Asn Phe Thr Asn
145   150   155   160
Glu Asp Arg Ser Arg Phe Leu Arg Phe Val Thr Gly Arg Ser Arg Leu
                165   170   175
Pro Ala Arg Xaa Ser Thr Ser Thr Gln Thr Ser Trp Ala Thr Arg Pro
            180   185   190
Xaa Asp Ala Leu Pro Glu Ser Ser Thr Cys Ser Ser Thr Leu Phe Leu
            195   200   205
Pro His Tyr Ala Ser Ala Lys Val Cys Glu Glu Lys Leu Arg Tyr Ala
        210   215   220
Ala Tyr Asn Cys Val Ala Ile Asp Thr Asp Met Ser Pro Trp Glu Glu
225   230   235   240

<210> 5075
<211> 444
<212> DNA
<213> Homo sapiens

<400> 5075

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<210> 5076
<211> 90
<212> PRT
<213> Homo sapiens

<400> 5076
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Ile Arg Lys Gln Gln Val Asn Cys Ser Pro Arg Trp Gln Trp Glu Ala
            20   25   30
Cys Trp Asp Gly Gly Gly Ser Gly Asn Phe Ser Ser Pro Gly Thr Leu
        35   40   45
Arg Glu Thr Glu Val Ile Thr Ala Val Leu Glu Leu Gly Arg Gly Gly
    50   55   60
Asp Gln Val Thr Ala Asp Gln Lys Ser Leu Asn Ile Asn Ala Met Glu
65   70   75   80
Arg Glu Leu Ala Leu Ser Leu Arg Val Ala
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<210> 5077
<211> 2352
<212> DNA
<213> Homo sapiens

<400> 5077
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360

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<210> 5078
<211> 558
<212> PRT
<213> Homo sapiens

<400> 5078

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Leu Gln Gln Phe Asp Phe Asn Val Asp Lys Ala Val Gln Ala Phe Val
            35                  40                  45
Asp Gly Ser Ala Ile Gln Val Leu Lys Glu Trp Asn Met Thr Gly Lys
        50                  55                  60
Lys Lys Asn Asn Lys Arg Lys Arg Ser Lys Ser Lys Gln His Gln Gly
65                  70                  75                  80
Asn Lys Asp Ala Lys Asp Lys Val Glu Arg Pro Glu Ala Gly Pro Leu
                85                  90                  95
Gln Pro Gln Pro Pro Gln Ile Gln Asn Gly Pro Met Asn Gly Cys Glu
            100                 105                 110
Lys Asp Ser Ser Ser Thr Asp Ser Ala Asn Glu Lys Pro Ala Leu Ile
            115                 120                 125
Pro Arg Glu Lys Lys Ile Ser Ile Leu Glu Glu Pro Ser Lys Ala Leu
        130                 135                 140
Arg Gly Val Thr Glu Gly Asn Arg Leu Leu Gln Gln Lys Leu Ser Leu
145                 150                 155                 160
Asp Gly Asn Pro Lys Pro Ile His Gly Thr Thr Glu Arg Ser Asp Gly
                165                 170                 175
Leu Gln Trp Ser Ala Glu Gln Pro Cys Asn Pro Ser Lys Pro Lys Ala
                180                 185                 190
Lys Thr Ser Pro Val Lys Ser Asn Thr Pro Ala Ala His Leu Glu Ile
            195                 200                 205
Lys Pro Asp Glu Leu Ala Lys Lys Arg Gly Pro Asn Ile Glu Lys Ser
        210                 215                 220
Val Lys Asp Leu Gln Arg Cys Thr Val Ser Leu Thr Arg Tyr Arg Val
225                 230                 235                 240
Met Ile Lys Glu Glu Val Asp Ser Ser Val Lys Lys Ile Lys Ala Ala
                245                 250                 255
Phe Ala Glu Leu His Asn Cys Ile Ile Asp Lys Glu Val Ser Leu Met
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   Gln Met Ala Glu Met Gln Leu Ala Glu Leu Arg Ala Glu Ile Lys His
   305                    310                    315                    320
   Phe Val Ser Glu Arg Lys Tyr Asp Glu Glu Leu Gly Lys Ala Ala Arg
                   325                    330                    335
   Phe Ser Cys Asp Ile Glu Gln Leu Lys Ala Gln Ile Met Leu Cys Gly
              340                    345                    350
   Glu Ile Thr His Pro Lys Asn Asn Tyr Ser Ser Arg Thr Pro Cys Ser
              355                    360                    365
   Ser Leu Leu Pro Leu Leu Asn Ala His Ala Ala Thr Ser Gly Lys Gln
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   Ser Asn Phe Ser Arg Lys Ser Ser Thr His Asn Lys Pro Ser Glu Gly
   385                    390                    395                    400
   Lys Ala Ala Asn Pro Lys Met Val Ser Ser Leu Pro Ser Thr Ala Asp
                   405                    410                    415
   Pro Ser His Gln Thr Met Pro Ala Asn Lys Gln Asn Gly Ser Ser Asn
              420                    425                    430
   Gln Arg Arg Arg Phe Asn Pro Gln Tyr His Asn Asn Arg Leu Asn Gly
              435                    440                    445
   Pro Ala Lys Ser Gln Gly Ser Gly Asn Glu Ala Glu Pro Leu Gly Lys
          450                    455                    460
   Gly Asn Ser Arg His Glu His Arg Arg Gln Pro His Asn Gly Phe Arg
   465                    470                    475                    480
   Pro Lys Asn Lys Gly Gly Ala Lys Asn Gln Glu Ala Ser Leu Gly Met
              485                    490                    495
   Lys Thr Pro Glu Ala Pro Ala His Ser Glu Lys Pro Arg Arg Arg Gln
              500                    505                    510
   His Ala Ala Asp Thr Ser Glu Ala Arg Pro Phe Arg Gly Ser Val Gly
          515                    520                    525
   Arg Val Ser Gln Cys Asn Leu Cys Pro Thr Arg Ile Glu Val Ser Thr
          530                    535                    540
   Asp Ala Ala Val Leu Ser Val Pro Ala Val Thr Leu Val Ala
   545                    550                    555
```

```
<210> 5079
<211> 1338
<212> DNA
<213> Homo sapiens

<400> 5079
ggcctccctc gttgccccag cctcgcgggc cgcctaactg ccccgttcca agggtgccac
60
cggaccccgc tggagaggaa cttctccgtt ggctgatttc atcaccaccc attcccgatt
120
ccacgtttcc tttaagcggg gctggcggag ccgcaaggcg gcaaggaact ggattgcgat
180
tggtcagcac gtgcctcggt cggcggtaca attggctgag gcgctgggcc ttgggaagca
240
ttccccgacg ggattggtcg tcgctctcgc agagcccgcc tcccgcagta caagcggccc
300
```

```
ccgggtcggg tgggaggagg ggactccggg aggaggaaca tggcggtggc ggacctcgct
360
ctcattcctg atgtggacat cgactccgac ggcgtcttca agtatgtgct gatccgagtc
420
cactcggctc cccgctccgg ggctccggct gcagagagca aggagatcgt gcgcggctac
480
aagtgggctg agtaccatgc ggacatctac gacaaagtgt cgggcgacat gcagaagcaa
540
ggctgcgact gtgagtgtct gggcggcggg cgcatctccc accagagtca ggacaagaag
600
attcacgtgt acggctattc catggtgagc cgcagccccg tcccgccctg ccggaggccc
660
cagtaccagc ttcgaggccc acctgagcct gctgccctga cccgtggccc cagctgagca
720
cgcaggcttc ctggggttct cccagggtcg gcggcagagc cctccctcca gggcccattg
780
tgttcctgca ttcccccatg gagcacacgc cagacctgag gggtgggacg acacccccca
840
ggcatggccg gctgtctcct ctccctgcct tgggaggcct tgctgggctc tagctgtcct
900
ccagcacttt gggccctggg cccccagagg cagtcagtac ctgggtggag ctcagagtcc
960
ccacctgtgc tcttcacaaa aaccaccagc agatgagacc cacgtgcgtc cctctgggcg
1020
cctcaggccc caggatccac catcaaggcc tatggtcctg cccagcacgc catttcaact
1080
gagaaaatca aagccaagta ccccgactac gaggtcacct gggctaacga cggctactga
1140
gcactcccag cccggggcct gctgcctcca gcagccactt cagagccccc gcctttgcct
1200
gcactcctct tgcagggctg gccctgcctg ctcctgcggc agcctctggt gacgtgctgt
1260
ccaccaggcc ttggagacag ctagcctgg ccacagaatt aaacgtgttg ccacaccaaa
1320
aaaaaaaaaa aaaaaaaa
1338
```

<210> 5080
<211> 165
<212> PRT
<213> Homo sapiens

<400> 5080

```
Gly Ala Gly Pro Trp Glu Ala Phe Pro Asp Gly Ile Gly Arg Arg Ser
1               5                   10                  15
Arg Arg Ala Arg Leu Pro Gln Tyr Lys Arg Pro Pro Gly Arg Val Gly
            20                  25                  30
Gly Gly Asp Ser Gly Arg Arg Asn Met Ala Val Ala Asp Leu Ala Leu
        35                  40                  45
Ile Pro Asp Val Asp Ile Asp Ser Asp Gly Val Phe Lys Tyr Val Leu
    50                  55                  60
Ile Arg Val His Ser Ala Pro Arg Ser Gly Ala Pro Ala Ala Glu Ser
65                  70                  75                  80
Lys Glu Ile Val Arg Gly Tyr Lys Trp Ala Glu Tyr His Ala Asp Ile
```

```
                    85                   90                   95
Tyr Asp Lys Val Ser Gly Asp Met Gln Lys Gln Gly Cys Asp Cys Glu
            100                  105                  110
Cys Leu Gly Gly Gly Arg Ile Ser His Gln Ser Gln Asp Lys Lys Ile
            115                  120                  125
His Val Tyr Gly Tyr Ser Met Val Ser Arg Ser Pro Val Pro Pro Cys
        130                  135                  140
Arg Arg Pro Gln Tyr Gln Leu Arg Gly Pro Pro Glu Pro Ala Ala Leu
145                  150                  155                  160
Thr Arg Gly Pro Ser
                165
```

```
<210> 5081
<211> 561
<212> DNA
<213> Homo sapiens
```

```
<400> 5081
nncggccggc ctgggctcgg gggctccggg ctctgggctc tgggtgcgcg gaccgggcca
60
ggctgcttga agacctcgcg acctgtgtca gcagagccgc cctgcaccac catgtgcatc
120
atcttcttta agtttgatcc tcgccctgtt tccaaaaacg cgtacaggta acccccctcgc
180
tctgcatctg ctgcgccctg cagggtcctg ggtgcccagc cagttctcat gccacccaag
240
ctgctgtgtg caggaaggtg tgtgggccag gacggggctg cacaggcctg gcactgccct
300
ccaggacagg gtcactcagt gtgggatgct gtcagaatgc ctctcggggc ggggactcca
360
gtcaatgtac aaagacgtga agactcagcc acagaaggca gccacaggct catcttggca
420
gccaacaggg atgaattcta cagccgaccc tccaagttag ctgacttctg ggggaacaac
480
aacgagatcc tcagtgggct ggacatggag gaaggcaagg aaggaggcac atggctgggc
540
atcagcacac gtggcaagct g
561
```

```
<210> 5082
<211> 111
<212> PRT
<213> Homo sapiens
```

```
<400> 5082
Met Pro Pro Lys Leu Leu Cys Ala Gly Arg Cys Val Gly Gln Asp Gly
1                5                  10                   15
Ala Ala Gln Ala Trp His Cys Pro Pro Gly Gln Gly His Ser Val Trp
            20                   25                   30
Asp Ala Val Arg Met Pro Leu Gly Ala Gly Thr Pro Val Asn Val Gln
            35                   40                   45
Arg Arg Glu Asp Ser Ala Thr Glu Gly Ser His Arg Leu Ile Leu Ala
        50                   55                   60
Ala Asn Arg Asp Glu Phe Tyr Ser Arg Pro Ser Lys Leu Ala Asp Phe
```

```
65                    70                    75                    80
Trp Gly Asn Asn Asn Glu Ile Leu Ser Gly Leu Asp Met Glu Glu Gly
                85                    90                    95
Lys Glu Gly Gly Thr Trp Leu Gly Ile Ser Thr Arg Gly Lys Leu
            100                   105                   110
```

<210> 5083
<211> 1856
<212> DNA
<213> Homo sapiens

<400> 5083
nnggccacta ggcacgggac agagcagtcg gtgacaggac agagcagtcg gtgacgggac
60
acagtggttg gtgacgggac agagcggtcg gtgacagcct caagggcttc agcaccgcgc
120
ccatggcaga gccagaccga ctcagattca gactctgagg gaggagccgc tggtggagaa
180
gcagacatgg acttcctgcg gaacttattc tcccagacgc tcagcctggg cagccagaag
240
gagcgtctgc tggacgagct gaccttggaa ggggtggccc ggtacatgca gagcgaacgc
300
tgtcgcagag tcatctgttt ggtgggagct ggaatctcca catccgcagg catccccgac
360
tttcgctctc catccaccgg cctctatgac aacctagaga agtaccatct tccctaccca
420
gaggccatct ttgagatcag ctatttcaag aaacatccgg aacccttctt cgccctcgcc
480
aaggaactct atcctgggca gttcaagcca accatctgtc actacttcat gcgcctgctg
540
aaggacaagg ggctactcct cgcgctgctac acgcagaaca tagataccct ggagcgaata
600
gccgggctgg aacaggagga cttggtggag cgcacggca ccttctacac atcacactgc
660
gtcagcgcca gctgccggca cgaatacccg ctaagctgga tgaaagagaa gatcttctct
720
gaggtgacgc ccaagtgtga agactgtcag agcctggtga gcctgatat cgtcttttttt
780
ggtgagagcc tcccagcgcg tttcttctcc tgtatgcagt cagacttcct gaaggtggac
840
ctcctcctgg tcatgggtac ctccttgcag gtgcagccct ttgcctccct catcagcaag
900
gcacccctct ccacccctcg cctgctcatc aacaaggaga aagctggcca gtcggaccct
960
ttcctgggga tgattatggg cctcggagga ggcatggact ttgactccaa gaaggcctac
1020
agggacgtgg cctggctggg tgaatgcgac cagggctgcc tggcccttgc tgagctcctt
1080
ggatggaaga aggagctgga ggaccttgtc cggagggagc acgccagcat agatgcccag
1140
tcgggggcgg gggtccccaa ccccagcact tcagcttccc ccaagaagtc cccgccacct
1200
gccaaggacg aggccaggac aacagagagg gagaaacccc agtgacagct gcatctccca
1260
```

```
ggcgggatgt cgagctcctc agggacagct gagccccaac cgggcctggc cccctcttaa
1320
ccagcagttc ttgtctgggg agctcagaac atcccccaat ctcttacagc tccctcccca
1380
aaactggggt cccagcaacc ctggccccca accccagcaa atctctaaca cctcctagag
1440
gccaaggctt aaacaggcat ctctaccagc cccactgtct ctaaccactc ctgggctaag
1500
gagtaacctc cctcatctct aactgccccc acggggccag ggctacccca gaactttaa
1560
ctcttccagg acagggagct tcgggccccc actctgtctc ctgccccgg gggcctgtgg
1620
ctaagtaaac catacctaac ctaccccagt gtgggtgtgg gcctctgaat ataacccaca
1680
cccagcgtag ggggagtctg agccgggagg gctcccgagt ctctgccttc agctcccaaa
1740
gtgggtggtg ggccccttc acgtgggacc cacttcccat gctggatggg cagaagacat
1800
tgcttattgg agacaaatta aaaacaaaaa caactaacaa aaaaaaaaa aaaaaa
1856
```

```
<210> 5084
<211> 396
<212> PRT
<213> Homo sapiens
```

```
<400> 5084
Arg Asp Thr Val Val Gly Asp Gly Thr Glu Arg Ser Val Thr Ala Ser
1               5                   10                  15
Arg Ala Ser Ala Pro Arg Pro Trp Gln Ser Gln Thr Asp Ser Asp Ser
            20                  25                  30
Asp Ser Glu Gly Gly Ala Ala Gly Gly Glu Ala Asp Met Asp Phe Leu
            35                  40                  45
Arg Asn Leu Phe Ser Gln Thr Leu Ser Leu Gly Ser Gln Lys Glu Arg
        50                  55                  60
Leu Leu Asp Glu Leu Thr Leu Glu Gly Val Ala Arg Tyr Met Gln Ser
65                  70                  75                  80
Glu Arg Cys Arg Arg Val Ile Cys Leu Val Gly Ala Gly Ile Ser Thr
                    85                  90                  95
Ser Ala Gly Ile Pro Asp Phe Arg Ser Pro Ser Thr Gly Leu Tyr Asp
                100                 105                 110
Asn Leu Glu Lys Tyr His Leu Pro Tyr Pro Glu Ala Ile Phe Glu Ile
            115                 120                 125
Ser Tyr Phe Lys Lys His Pro Glu Pro Phe Phe Ala Leu Ala Lys Glu
        130                 135                 140
Leu Tyr Pro Gly Gln Phe Lys Pro Thr Ile Cys His Tyr Phe Met Arg
145                 150                 155                 160
Leu Leu Lys Asp Lys Gly Leu Leu Leu Arg Cys Tyr Thr Gln Asn Ile
                165                 170                 175
Asp Thr Leu Glu Arg Ile Ala Gly Leu Glu Gln Glu Asp Leu Val Glu
            180                 185                 190
Ala His Gly Thr Phe Tyr Thr Ser His Cys Val Ser Ala Ser Cys Arg
            195                 200                 205
His Glu Tyr Pro Leu Ser Trp Met Lys Glu Lys Ile Phe Ser Glu Val
```

```
            210                215                220
Thr Pro Lys Cys Glu Asp Cys Gln Ser Leu Val Lys Pro Asp Ile Val
225                230                235                240
Phe Phe Gly Glu Ser Leu Pro Ala Arg Phe Phe Ser Cys Met Gln Ser
                245                250                255
Asp Phe Leu Lys Val Asp Leu Leu Leu Val Met Gly Thr Ser Leu Gln
                260                265                270
Val Gln Pro Phe Ala Ser Leu Ile Ser Lys Ala Pro Leu Ser Thr Pro
        275                280                285
Arg Leu Leu Ile Asn Lys Glu Lys Ala Gly Gln Ser Asp Pro Phe Leu
        290                295                300
Gly Met Ile Met Gly Leu Gly Gly Gly Met Asp Phe Asp Ser Lys Lys
305                310                315                320
Ala Tyr Arg Asp Val Ala Trp Leu Gly Glu Cys Asp Gln Gly Cys Leu
                325                330                335
Ala Leu Ala Glu Leu Leu Gly Trp Lys Lys Glu Leu Glu Asp Leu Val
                340                345                350
Arg Arg Glu His Ala Ser Ile Asp Ala Gln Ser Gly Ala Gly Val Pro
                355                360                365
Asn Pro Ser Thr Ser Ala Ser Pro Lys Lys Ser Pro Pro Pro Ala Lys
        370                375                380
Asp Glu Ala Arg Thr Thr Glu Arg Glu Lys Pro Gln Gln
385                390                395
```

```
<210> 5085
<211> 2964
<212> DNA
<213> Homo sapiens
```

```
<400> 5085
nactgcccat ccccggttgt cccacttttg ttcgcctctc ttcggccctc tactcaagag
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ctccgtctcc gtctcgccct cctcgaagtc ctcgtcgcgc gcccgcgacc caggtcgccc
120
tgaaatctag cccgtccgag cgcgagtcca acggccgcgg ccgcaccaag gcccccctcag
180
accgtgccat gggtgacagt gatgacgagt acgatcgaag gcgcagggac aagttcagaa
240
gagagcgcag cgactacgac cgttcccgcg agagagatga aagacgtcga ggggacgatt
300
ggaatgacag agagtgggac cgtggccgtg agcgccgtag tcggggtgaa tatcgggact
360
atgaccggaa tcggcgagag cgcttctcgc cacctcgcca cgaactcagc ccgccacaga
420
agcgcatgag gagagactgg gatgagcaca gctctgaccc ataccacagt ggctatgaga
480
tgccctatgc tgngggggggg tggggggccca acttatggcc ccctcagcc ctggggccac
540
cctgacgtcc acatcatgca gcaccatgtc ctgcctatcc aggccaggct gggcagcatt
600
gcagagattg acctgggtgt gccgccgccc gtgatgaaga ccttcaagga gtttctcctc
660
tccctggatg actcggtgga tgagacggag gccgtcaagc gctataatga ctacaagctg
720
```

```
gatttccgga ggcaacagat gcaggatttc ttcctggcgc acaaagatga ggagtggttt
780
cggtctaagt accacccaga tgaggtgggg aagcgtcggc aggaggcccg gggggccctg
840
caaaaccgac tgagggtctt cctgtccctc atggagactg gctggtttga taaccttctc
900
ctggacatag acaaagctga tgccattgtc aagatgctgg atgcagccgt gattaagatg
960
gaaggaggca cggagaatga tcttcgcatc ctggagcagg aggaggagga ggagcaggca
1020
ggaaagcctg gggagcccag caagaaagaa gaaggacggg ctggagcagg cctaggggac
1080
ggggagcgca aaaccaacga caaggatgag aagaaggaag acggcaagca ggctgagaat
1140
gacagttcta atgatgacaa aacaaagaag tcggagggtg atggggacaa ggaagagaag
1200
aaagaagact ccgagaagga agccaaaaag agtagcaaga agcggaaccg gaagcacagt
1260
ggtgacgaca gctttgacga gggcagcgtg tcagagtctg agtcggagtc agagagcggc
1320
caggctgagg aggagaagga ggaggccgaa gaagcgctca aggagaagga gaagcccaag
1380
gaagaagaat gggagaagcc caaggacgcc gcggggctgg agtgcaagcc gcggccgctg
1440
cataagacct gctccctctt catgcgcaac atcgcgccca acatctcccg ggccgagatc
1500
atctcccttt gtaaaaggta cccaggcttt atgcgggtgg cgctctcaga gccccagcca
1560
gagaggaggt ttttccgtcg tggctgggtg accttcgacc gcagtgttaa cattaaagag
1620
atctgttgga acctgcagaa catccgtctc cgggagtgtg agctgagccc tggtgtgaac
1680
agggacctga cccggcgcgt tcgcaacatc aacggcatca cccagcacaa gcagattgtg
1740
cgcaacgaca tcaagctggc ggccaagctg atccacacgc tggatgacag gacacagctt
1800
tgggcctcag aaccagggac gcctcccctg cccacgagcc tgccctcgca aaacccgatc
1860
ttgaagaata tcaccgacta cctgatcgag gaagtaagcg ccgaggagga ggagctgctg
1920
gggagcagcg ggggcgctcc tcctgaggag cctcctaagg aagggaaccc ggcagagatc
1980
aacgtggagc gggatgagaa gttgattaag gtcttggaca agctcctcct ttacctgcgc
2040
atcgtgcatt ccttggatta ttacaacacc tgtgagtacc ccaacgagga cgagatgccc
2100
aatcgctgtg ggatcatcca cgttcggggg cccatgccac ccaaccgcat cagtcacggg
2160
gaagtgctgg agtggcagaa gactttgag gagaagctca cgccgttgct gagtgtgcgg
2220
gagtcactct cagaggaaga ggcccagaag atggggcgca agacccaga gcaggaagtg
2280
gagaagttcg tcacctccaa cacgcaggaa ctgggcaagg ataagtggct gtgtcctctc
2340
```

agtggcaaga aattcaaggg tcctgagttt gtgcgcaaac atatcttcaa caagcatgca
2400
gagaaaattg aggaagtgaa aaaggaagtc gcgttttta acaacttcct cactgatgct
2460
aagcgcccag ctctgcctga gatcaagcca gcccagccac ctggccccgc ccagatactc
2520
cccccaggtt tgaccccagg actcccctac ccacaccaga ctccccaggg cctgatgccc
2580
tatggtcagc cccggccccc gatcttgggc tatggagctg gtgctgtccg ccctgcagtc
2640
cccacaggag gccctccata cccccatgcc ccgtatggtg ctggtcgagg gaactatgat
2700
gccttccgag gccagggagg ttatcctggg aaacctcgca acaggatggt tcgtggagac
2760
ccaagggcca ttgtggaata tcgggacctg gatgccccag acgatgttga tttctttga
2820
gccgtccccc gttcctcagt cctgtatcat ccatacttgt actaccttgt cctatgaagc
2880
tctgagaatt ttttgtacga tcagccttac tgctaataaa agcacttcca cagggaaaaa
2940
aaaaaaaaaa aaaaaaagtc gacg
2964

<210> 5086
<211> 792
<212> PRT
<213> Homo sapiens

<400> 5086
Met Ser Thr Ala Leu Thr His Thr Thr Val Ala Met Arg Cys Pro Met
1   5   10   15
Leu Xaa Gly Gly Gly Pro Thr Tyr Gly Pro Pro Gln Pro Trp Gly
            20   25   30
His Pro Asp Val His Ile Met Gln His His Val Leu Pro Ile Gln Ala
        35   40   45
Arg Leu Gly Ser Ile Ala Glu Ile Asp Leu Gly Val Pro Pro Pro Val
    50   55   60
Met Lys Thr Phe Lys Glu Phe Leu Leu Ser Leu Asp Asp Ser Val Asp
65   70   75   80
Glu Thr Glu Ala Val Lys Arg Tyr Asn Asp Tyr Lys Leu Asp Phe Arg
                85   90   95
Arg Gln Gln Met Gln Asp Phe Phe Leu Ala His Lys Asp Glu Glu Trp
            100   105   110
Phe Arg Ser Lys Tyr His Pro Asp Glu Val Gly Lys Arg Arg Gln Glu
            115   120   125
Ala Arg Gly Ala Leu Gln Asn Arg Leu Arg Val Phe Leu Ser Leu Met
        130   135   140
Glu Thr Gly Trp Phe Asp Asn Leu Leu Leu Asp Ile Asp Lys Ala Asp
145   150   155   160
Ala Ile Val Lys Met Leu Asp Ala Ala Val Ile Lys Met Glu Gly Gly
                165   170   175
Thr Glu Asn Asp Leu Arg Ile Leu Glu Gln Glu Glu Glu Glu Glu Gln
                180   185   190
Ala Gly Lys Pro Gly Glu Pro Ser Lys Lys Glu Glu Gly Arg Ala Gly

```
                 195                    200                    205
      Ala Gly Leu Gly Asp Gly Glu Arg Lys Thr Asn Asp Lys Asp Glu Lys
          210                    215                    220
      Lys Glu Asp Gly Lys Gln Ala Glu Asn Asp Ser Ser Asn Asp Asp Lys
      225                    230                    235                    240
      Thr Lys Lys Ser Glu Gly Asp Gly Asp Lys Glu Glu Lys Lys Glu Asp
                         245                    250                    255
      Ser Glu Lys Glu Ala Lys Lys Ser Ser Lys Lys Arg Asn Arg Lys His
                         260                    265                    270
      Ser Gly Asp Asp Ser Phe Asp Glu Gly Ser Val Ser Glu Ser Glu Ser
                         275                    280                    285
      Glu Ser Glu Ser Gly Gln Ala Glu Glu Glu Lys Glu Glu Ala Glu Glu
          290                    295                    300
      Ala Leu Lys Glu Lys Glu Lys Pro Lys Glu Glu Glu Trp Glu Lys Pro
      305                    310                    315                    320
      Lys Asp Ala Ala Gly Leu Glu Cys Lys Pro Arg Pro Leu His Lys Thr
                         325                    330                    335
      Cys Ser Leu Phe Met Arg Asn Ile Ala Pro Asn Ile Ser Arg Ala Glu
                         340                    345                    350
      Ile Ile Ser Leu Cys Lys Arg Tyr Pro Gly Phe Met Arg Val Ala Leu
                         355                    360                    365
      Ser Glu Pro Gln Pro Glu Arg Arg Phe Phe Arg Arg Gly Trp Val Thr
                         370                    375                    380
      Phe Asp Arg Ser Val Asn Ile Lys Glu Ile Cys Trp Asn Leu Gln Asn
      385                    390                    395                    400
      Ile Arg Leu Arg Glu Cys Glu Leu Ser Pro Gly Val Asn Arg Asp Leu
                         405                    410                    415
      Thr Arg Arg Val Arg Asn Ile Asn Gly Ile Thr Gln His Lys Gln Ile
                420                    425                    430
      Val Arg Asn Asp Ile Lys Leu Ala Ala Lys Leu Ile His Thr Leu Asp
                435                    440                    445
      Asp Arg Thr Gln Leu Trp Ala Ser Glu Pro Gly Thr Pro Pro Leu Pro
          450                    455                    460
      Thr Ser Leu Pro Ser Gln Asn Pro Ile Leu Lys Asn Ile Thr Asp Tyr
      465                    470                    475                    480
      Leu Ile Glu Glu Val Ser Ala Glu Glu Glu Leu Leu Gly Ser Ser
                         485                    490                    495
      Gly Gly Ala Pro Pro Glu Glu Pro Pro Lys Glu Gly Asn Pro Ala Glu
                         500                    505                    510
      Ile Asn Val Glu Arg Asp Glu Lys Leu Ile Lys Val Leu Asp Lys Leu
                         515                    520                    525
      Leu Leu Tyr Leu Arg Ile Val His Ser Leu Asp Tyr Tyr Asn Thr Cys
          530                    535                    540
      Glu Tyr Pro Asn Glu Asp Glu Met Pro Asn Arg Cys Gly Ile Ile His
      545                    550                    555                    560
      Val Arg Gly Pro Met Pro Pro Asn Arg Ile Ser His Gly Glu Val Leu
                         565                    570                    575
      Glu Trp Gln Lys Thr Phe Glu Glu Lys Leu Thr Pro Leu Leu Ser Val
                         580                    585                    590
      Arg Glu Ser Leu Ser Glu Glu Glu Ala Gln Lys Met Gly Arg Lys Asp
                         595                    600                    605
      Pro Glu Gln Glu Val Glu Lys Phe Val Thr Ser Asn Thr Gln Glu Leu
          610                    615                    620
      Gly Lys Asp Lys Trp Leu Cys Pro Leu Ser Gly Lys Lys Phe Lys Gly
```

```
625                   630                   635                   640
Pro Glu Phe Val Arg Lys His Ile Phe Asn Lys His Ala Glu Lys Ile
                  645                   650                   655
Glu Glu Val Lys Lys Glu Val Ala Phe Phe Asn Asn Phe Leu Thr Asp
                  660                   665                   670
Ala Lys Arg Pro Ala Leu Pro Glu Ile Lys Pro Ala Gln Pro Pro Gly
          675                   680                   685
Pro Ala Gln Ile Leu Pro Pro Gly Leu Thr Pro Gly Leu Pro Tyr Pro
      690                   695                   700
His Gln Thr Pro Gln Gly Leu Met Pro Tyr Gly Gln Pro Arg Pro Pro
705                   710                   715                   720
Ile Leu Gly Tyr Gly Ala Gly Ala Val Arg Pro Ala Val Pro Thr Gly
                  725                   730                   735
Gly Pro Pro Tyr Pro His Ala Pro Tyr Gly Ala Gly Arg Gly Asn Tyr
              740                   745                   750
Asp Ala Phe Arg Gly Gln Gly Gly Tyr Pro Gly Lys Pro Arg Asn Arg
          755                   760                   765
Met Val Arg Gly Asp Pro Arg Ala Ile Val Glu Tyr Arg Asp Leu Asp
      770                   775                   780
Ala Pro Asp Asp Val Asp Phe Phe
785                   790
```

<210> 5087
<211> 4949
<212> DNA
<213> Homo sapiens

<400> 5087
```
gcctaactgc cccgttccaa gggtgccacc ggaccccgct ggagaggaac ttctccgttg
60
gctgatttca tcaccaccca ttcccgattc cacgtttcct ttaagcgggt ctggcggacg
120
caaggcgtca aggaactgga ttgcgattgg tcagcacgtg cctcggtcgg cggtacaatt
180
ggctgaggcg ctgggccttg ggaagcattc cccgacggga ttggtcgtcg ctctcgcaga
240
gcccgcctcc cgcagtacaa gcggcccccg ggtcgggtgg gaggagggga ctccgggagg
300
aggaacatgg cggtggcgga cctcgctctc attcctgatg tggacatcga ctccgacggc
360
gtcttcaagt atgtgctgat ccgagtccac tcggctcccc gctccggggc tccggctgca
420
gagagcaagg agatcgtgcg cggctacaag tgggctgagt accatgcgga catctacgac
480
aaagtgtcgg gcgacatgca gaagcaaggc tgcgactgtg agtgtctggg cggcgggcgc
540
atctcccacc agagtcagga caagaagatt cacgtgtacg gctattccat ggcctatggt
600
cctgcccagc acgccatttc aactgagaaa atcaaagcca gtaccccga ctacgaggtc
660
acctgggcta cgacggcta ctgagcactc ccagcccggg gcctgctgcc tccagcagcc
720
acttcagagc ccccgccttt gcctgcactc ctcttgcagg gctggccctg cctgctcctg
780
```

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cggcagcctc tggtgacgtg ctgtccacca ggccttggag acaggctagc ctggccacag
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2400
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4271

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4272

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4140

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4620

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4680

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4949

<210> 5088
<211> 465
<212> PRT
<213> Homo sapiens

<400> 5088
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Leu Val Gly Gly Ala Gln Gly Glu Gly Gly Trp Ala Ala Gly Asp Lys
            20   25   30
Gln Gly Arg Ser Cys Pro Gly Thr Pro Asp Ile Ala Asp Val Ala Glu
            35   40   45
Leu Arg Val Glu Leu Thr His Gly Ala Glu Thr Leu Thr Leu Trp Gln
        50   55   60
Ser Thr Gly Pro Trp Xaa Pro Trp Xaa Trp Gln Glu Leu Ala Val Thr
65   70   75   80
Thr Gly Arg Ile Arg Gly Asp Phe Arg Val Thr Phe Ser Ala Thr Arg
                85   90   95
Asn Ala Thr His Arg Gly Ala Val Ala Leu Asp Asp Leu Glu Phe Trp
            100   105   110
Asp Cys Gly Leu Pro Thr Pro Gln Ala Asn Cys Pro Pro Gly His His

4273

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              115                    120                    125
     His Cys Gln Asn Lys Val Cys Val Glu Pro Gln Gln Leu Cys Asp Gly
          130                    135                    140
     Glu Asp Asn Cys Gly Asp Leu Ser Asp Glu Asn Pro Leu Thr Cys Gly
     145                    150                    155                    160
     Arg His Ile Ala Thr Asp Phe Glu Thr Gly Leu Gly Pro Trp Asn Arg
                        165                    170                    175
     Ser Glu Gly Trp Ser Arg Asn His Arg Ala Gly Gly Pro Glu Arg Pro
                   180                    185                    190
     Ser Trp Pro Arg Arg Asp His Ser Arg Asn Ser Ala Xaa Arg Leu Val
                   195                    200                    205
     Phe Tyr Gln Tyr Leu Ser Gly Ser Glu Ala Gly Cys Leu Gln Leu Phe
          210                    215                    220
     Leu Gln Thr Leu Gly Pro Gly Ala Pro Arg Ala Pro Val Leu Leu Arg
     225                    230                    235                    240
     Arg Arg Arg Gly Glu Leu Gly Thr Ala Trp Val Arg Asp Arg Val Asp
                   245                    250                    255
     Ile Gln Ser Ala Tyr Pro Phe Gln Ile Leu Leu Ala Gly Gln Thr Gly
                   260                    265                    270
     Pro Gly Gly Val Val Gly Leu Asp Asp Leu Ile Leu Ser Asp His Cys
                   275                    280                    285
     Arg Pro Val Ser Glu Val Ser Thr Leu Gln Pro Leu Pro Pro Gly Pro
          290                    295                    300
     Arg Ala Pro Ala Pro Gln Pro Leu Pro Pro Ser Ser Arg Leu Gln Asp
     305                    310                    315                    320
     Ser Cys Lys Gln Gly His Leu Ala Cys Gly Asp Leu Cys Val Pro Pro
                   325                    330                    335
     Glu Gln Leu Cys Asp Phe Glu Glu Gln Cys Ala Gly Gly Glu Asp Glu
                   340                    345                    350
     Gln Ala Cys Gly Thr Thr Asp Phe Glu Ser Pro Glu Ala Gly Gly Trp
                   355                    360                    365
     Glu Asp Ala Ser Val Gly Arg Leu Gln Trp Arg Arg Val Ser Ala Gln
          370                    375                    380
     Glu Ser Gln Gly Ser Ser Ala Ala Ala Ala Gly His Phe Leu Ser Leu
     385                    390                    395                    400
     Gln Arg Ala Trp Gly Gln Leu Gly Ala Glu Ala Arg Val Leu Thr Pro
                   405                    410                    415
     Leu Leu Gly Pro Ser Gly Pro Ser Cys Glu Leu His Leu Ala Tyr Tyr
                   420                    425                    430
     Leu Gln Ser Gln Pro Arg Ala Gly Phe Val Gly Leu Val Asp Leu Asp
                   435                    440                    445
     Gly Pro Asp Gln Gln Xaa Ser Trp Gly Gly Gln Arg Asp Pro Glu Gly
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     Leu
     465


     <210> 5089
     <211> 793
     <212> DNA
     <213> Homo sapiens

     <400> 5089
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180
ctagggcttg ggctagaaga tgagctgcgc atggagccac tgggcctgga agggctaaac
240
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300
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360
cattcctttc ctcccttccc cctggcaggt agagactcta ctctctgtcc ccagatcctc
420
tttctagcat gaatgaagga tgccaagaat gagaaaaagc aaggggtttg tccaggtggc
480
ccctgaattc tgcgcaaggg atgggcctgg gggaactcaa gggagggcct aaagcacttg
540
taactttgaa ccgtctgtct ggaggtcaga gcctgttgga aagcaggggt agaggggagc
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660
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720
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780
aaaaaaaaaa aaa
793
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<210> 5090
<211> 104
<212> PRT
<213> Homo sapiens

<400> 5090
Xaa Asp His Ile Ser Asp Asp Pro His Thr Phe Asn His Gln Asn Leu
 1               5                  10                  15
Thr His Cys Ser Arg His Gly Ser Gly Pro Asn Ile Ile Leu Thr Gly
                20                  25                  30
Asp Ser Ser Pro Gly Phe Ser Lys Glu Ile Ala Ala Ala Leu Ala Gly
            35                  40                  45
Val Pro Gly Phe Glu Val Ser Ala Ala Gly Leu Glu Leu Gly Leu Gly
        50                  55                  60
Leu Glu Asp Glu Leu Arg Met Glu Pro Leu Gly Leu Glu Gly Leu Asn
65                  70                  75                  80
Met Leu Ser Asp Pro Cys Ala Leu Leu Pro Asp Pro Ala Val Glu Glu
                85                  90                  95
Ser Phe Arg Ser Asp Arg Leu Gln
                100
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<210> 5091
<211> 3150
<212> DNA
<213> Homo sapiens

<400> 5091
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120
tgcatccgga ccctctcccc atcccagcct cccatgccaa ggcccgcctt gtcagtcact
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240
aacagttggt cccatacacc tttccccaag ttggagctag gcctggggcc ccagcccatg
300
gcgccccggg agctccctac ctgctccatc tgcctggaga ggttgcgcga ccccatctcg
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420
gagccgccct gctgtcctga gtgccggaag atatgcaagc agaagagggg cctccggagc
480
ctgggcgaga agatgaagct cctgccgcag cggccgctgc cccctgcact gcaggagacg
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1620
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4276

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1680

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1740

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1800

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1980

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2100

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2160

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2880

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3060

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3120

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3150

<210> 5092

4277

<211> 632
<212> PRT
<213> Homo sapiens

<400> 5092
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            20   25   30
Ser His Thr Pro Phe Pro Lys Leu Glu Leu Gly Leu Gly Pro Gln Pro
        35   40   45
Met Ala Pro Arg Glu Leu Pro Thr Cys Ser Ile Cys Leu Glu Arg Leu
    50   55   60
Arg Asp Pro Ile Ser Leu Asp Cys Gly His Asp Phe Cys Ile Arg Cys
65   70   75   80
Phe Ser Thr His Arg Leu Pro Gly Cys Glu Pro Pro Cys Cys Pro Glu
                85   90   95
Cys Arg Lys Ile Cys Lys Gln Lys Arg Gly Leu Arg Ser Leu Gly Glu
            100   105   110
Lys Met Lys Leu Leu Pro Gln Arg Pro Leu Pro Pro Ala Leu Gln Glu
        115   120   125
Thr Cys Pro Val Arg Ala Glu Pro Leu Leu Leu Val Arg Ile Asn Ala
    130   135   140
Ser Gly Gly Leu Ile Leu Arg Met Gly Ala Ile Asn Arg Cys Leu Lys
145   150   155   160
His Pro Leu Ala Arg Asp Thr Pro Val Cys Leu Leu Ala Val Leu Gly
                165   170   175
Glu Gln His Ser Gly Lys Ser Phe Leu Leu Asn His Leu Leu Gln Gly
            180   185   190
Leu Pro Gly Leu Glu Ser Gly Glu Gly Gly Arg Pro Arg Gly Gly Glu
        195   200   205
Ala Ser Leu Gln Gly Cys Arg Trp Gly Ala Asn Gly Leu Ala Gly Gly
    210   215   220
Ile Trp Met Trp Ser His Pro Phe Leu Leu Gly Lys Glu Gly Lys Lys
225   230   235   240
Val Ala Val Phe Leu Val Asp Thr Gly Asp Ala Met Ser Pro Glu Leu
                245   250   255
Ser Arg Glu Thr Arg Ile Lys Leu Cys Ala Leu Thr Thr Met Leu Ser
            260   265   270
Ser Tyr Gln Ile Leu Ser Thr Ser Gln Glu Leu Lys Asp Thr Asp Leu
        275   280   285
Asp Tyr Leu Glu Met Phe Val His Val Ala Glu Val Met Gly Lys His
    290   295   300
Tyr Gly Met Val Pro Ile Gln His Leu Asp Leu Leu Val Arg Asp Ser
305   310   315   320
Ser His Pro Asn Lys Ala Gly Gln Gly His Val Gly Asn Ile Phe Gln
                325   330   335
Arg Leu Ser Gly Arg Tyr Pro Lys Val Gln Glu Leu Leu Gln Gly Lys
            340   345   350
Arg Ala Arg Cys Cys Leu Leu Pro Ala Pro Gly Arg Arg Arg Met Asn
        355   360   365
Gln Gly His Ala Ser Pro Gly Gly Asp Thr Asp Asp Asp Phe Arg His
    370   375   380
Leu Leu Gly Ala Tyr Val Ser Asp Val Leu Ser Ala Ala Pro Gln His

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385                     390                     395                     400
Ala Lys Ser Arg Cys Gln Gly Tyr Trp Asn Glu Gly Arg Ala Val Ala
                405                     410                     415
Arg Gly Asp Arg Arg Leu Leu Thr Gly Gln Gln Leu Ala Gln Glu Ile
            420                     425                     430
Lys Asn Leu Ser Gly Trp Met Gly Arg Thr Gly Pro Gly Phe Thr Ser
            435                     440                     445
Pro Asp Glu Met Ala Ala Gln Leu His Asp Leu Arg Lys Val Glu Ala
        450                     455                     460
Ala Lys Arg Glu Phe Glu Glu Tyr Val Arg Gln Gln Asp Val Ala Thr
465                     470                     475                     480
Lys Arg Ile Phe Ser Ala Leu Arg Val Leu Pro Asp Thr Met Arg Asn
                485                     490                     495
Leu Leu Ser Thr Gln Lys Asp Ala Ile Leu Ala Arg His Gly Val Ala
                500                     505                     510
Leu Leu Cys Lys Gly Arg Asp Gln Thr Leu Glu Ala Leu Glu Ala Glu
        515                     520                     525
Leu Gln Ala Thr Ala Lys Ala Phe Met Asp Ser Tyr Thr Met Arg Phe
        530                     535                     540
Cys Gly His Leu Ala Ala Val Gly Gly Ala Val Gly Ala Gly Leu Met
545                     550                     555                     560
Gly Leu Ala Gly Gly Val Val Gly Ala Gly Met Ala Ala Ala Ala Leu
            565                     570                     575
Ala Ala Glu Ala Gly Met Val Ala Ala Gly Ala Ala Val Gly Ala Thr
            580                     585                     590
Gly Ala Ala Val Val Gly Gly Gly Val Gly Ala Gly Leu Ala Ala Thr
        595                     600                     605
Val Gly Cys Met Glu Lys Glu Glu Asp Glu Arg Leu Leu Glu Gly Asp
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625                     630
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<210> 5093
<211> 1662
<212> DNA
<213> Homo sapiens

<400> 5093
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360
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420
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480

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1662


<210> 5094
<211> 365
<212> PRT
<213> Homo sapiens

<400> 5094
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Ala Ser Gly Thr Gly Ala Val Val Thr Ser Leu Phe Met Thr Pro Leu
            20                  25                  30
Asp Val Val Lys Val Arg Leu Gln Ser Gln Arg Pro Ser Met Ala Ser
        35                  40                  45
Glu Leu Met Pro Ser Ser Arg Leu Trp Ser Leu Ser Tyr Thr Lys Leu
```

```
            50                      55                      60
Pro Ser Leu Ser Tyr Thr Lys Trp Lys Cys Leu Leu Tyr Cys Asn Gly
65                      70                      75                      80
Val Leu Glu Pro Leu Tyr Leu Cys Pro Asn Gly Ala Arg Cys Ala Thr
                85                      90                      95
Trp Phe Gln Asp Pro Thr Arg Phe Thr Gly Thr Met Asp Ala Phe Val
            100                     105                     110
Lys Ile Val Arg His Glu Gly Thr Arg Thr Leu Trp Ser Gly Leu Pro
            115                     120                     125
Ala Thr Leu Val Met Thr Val Pro Ala Thr Ala Ile Tyr Phe Thr Ala
            130                     135                     140
Tyr Asp Gln Leu Lys Ala Phe Leu Cys Gly Arg Ala Leu Thr Ser Asp
145                     150                     155                     160
Leu Tyr Ala Pro Met Val Ala Gly Ala Leu Ala Arg Leu Gly Thr Val
                165                     170                     175
Thr Val Ile Ser Pro Leu Glu Leu Met Arg Thr Lys Leu Gln Ala Gln
                180                     185                     190
His Val Ser Tyr Arg Glu Leu Gly Ala Cys Val Arg Thr Ala Val Ala
            195                     200                     205
Gln Gly Gly Trp Arg Ser Leu Trp Leu Gly Trp Gly Pro Thr Ala Leu
    210                     215                     220
Arg Asp Val Pro Phe Ser Val His Pro Pro Pro Gln Ala Leu Tyr Trp
225                     230                     235                     240
Phe Asn Tyr Glu Leu Val Lys Ser Trp Leu Asn Gly Leu Arg Pro Lys
                245                     250                     255
Asp Gln Thr Ser Val Gly Met Ser Phe Val Ala Gly Gly Ile Ser Gly
            260                     265                     270
Thr Val Ala Ala Val Leu Thr Leu Pro Phe Asp Val Val Lys Thr Gln
            275                     280                     285
Arg Gln Val Ala Leu Gly Ala Met Glu Ala Val Arg Val Asn Pro Leu
    290                     295                     300
His Val Asp Ser Thr Trp Leu Leu Leu Arg Arg Ile Arg Ala Glu Ser
305                     310                     315                     320
Gly Thr Lys Gly Leu Phe Ala Gly Phe Leu Pro Arg Ile Ile Lys Ala
            325                     330                     335
Ala Pro Ser Cys Ala Ile Met Ile Ser Thr Tyr Glu Phe Gly Lys Ser
        340                     345                     350
Phe Phe Gln Arg Leu Asn Gln Asp Arg Leu Leu Gly Gly
        355                     360                     365
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<210> 5095
<211> 2230
<212> DNA
<213> Homo sapiens

<400> 5095

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120
tttcttgacg tctctaggaa ccttcaggcc acggatcagc agaacataca cgaacaaggg
180
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240
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4281

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acttggtaaa cagtgtgtgt ttaatccagc ctctgcctct gactaccttt aagaccagga
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360
cagaggcgtt caaagtagtg acgcagtgag gtctgaatga acacggagga ttttattact
420
caccattaat ggtagtgaaa tgcccttcgg tggataccat caggtgaggt agggaagaca
480
ttccagagga aatctgttaa tggggcaacg tttttatttc tgtacattta catacaaatt
540
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gaactcagcg taagcttgtg ctatgaacga gcaccgtcag agaattccca cccacacgta
660
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720
gacatgacac accatactgc ttttccaaaa cacacgggac atgaaagcga ggtggtgcct
780
tctagacgag aggacagctg tagtgtgggc ctcccccgca catgcgatac ctcgggccgg
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1080
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1860
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gatccttccc accttcccca actgcctact ggcctggcta ctggataggt cctattctgt
2100
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2230

<210> 5096
<211> 153
<212> PRT
<213> Homo sapiens

<400> 5096
Met Ala Leu Ser Arg Arg Gly Gly Pro Thr Ala Leu Leu Pro Gly Gln
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Pro Glu Glu Glu Glu Ala Gly Cys Leu Phe Gly Gly Ser Phe Ser Leu
                20   25   30
Gly Ile Pro Glu Ala Val Glu Gln His Leu Tyr Glu Met Leu Pro Glu
            35   40   45
Gln Gln His Phe Pro Val Gly Thr Ala Pro Gly Asn Pro Val Pro Ser
        50   55   60
Glu Gln Gly Gly Arg Thr His Pro Ser Leu Ile Arg Ile Trp Ala Arg
65   70   75   80
Arg Ala Gln Gln Gly Arg Leu Leu Arg Leu Pro Thr Ser Gln His Arg
                85   90   95
Leu Ser Gly Leu Asn Pro Ser Val Leu Phe Pro Ser Trp Leu Ile Gly
            100   105   110
Arg Pro Phe Ala Gly Thr His Cys Phe Asn Leu Thr Leu Pro Pro Pro
        115   120   125
Ala Thr Leu Leu His Thr Pro Leu Arg Ser Ala Ser Leu Pro Cys Gln
    130   135   140
Pro Phe Asn Lys Ser Tyr Ala Gln Met
145   150

<210> 5097
<211> 3074
<212> DNA
<213> Homo sapiens

<400> 5097
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120
ggctcagcac gaggctaaag tcagaagtga gtgaaaacaa aatagcatgt tgatttaagt
180

4283

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240
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4284

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3074
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<210> 5098
<211> 114
<212> PRT
<213> Homo sapiens

<400> 5098
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1               5                   10                  15
Gly Val Phe Ala Ile Met Leu Pro Thr Lys Ser Lys Glu Cys Trp Phe
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                    20                    25                    30
Pro Ser Phe Gln Pro Gln His Phe Gln Lys Ala Leu Phe Phe Leu Glu
            35                    40                    45
Thr Glu Ser Arg Cys Val Ser Gln Ala Gly Val Gln Arg Gly Asp Leu
        50                    55                    60
Ser Ser Leu Gln Pro Leu Pro Pro Gly Phe Lys Gln Phe Ser Cys Leu
65                    70                    75                    80
Ser Leu Pro Ser Ser Trp Asp Tyr Arg Cys Val Pro Pro His Pro Ala
                85                    90                    95
Asn Phe Cys Ile Phe Ser Arg Asn Gly Val Ser Pro His Trp Pro Gly
                100                   105                   110
Trp Ser
```

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<210> 5099
<211> 801
<212> DNA
<213> Homo sapiens

<400> 5099
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801

<210> 5100
<211> 102
<212> PRT
<213> Homo sapiens
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<400> 5100
Ala Cys Arg Arg Ala Arg Val Gly Glu Ala Asp Trp Val Leu Gly Leu
 1   5   10   15
Cys Asp Glu Ala Gly Thr Pro Val Gly Leu Gly Leu Leu Leu Glu Leu
            20   25   30
Gly Pro Ser Ala Arg Pro Pro Pro Thr Pro Thr Trp Thr Gly Pro Gly
        35   40   45
Leu Gly Thr Leu Ser Cys Val Lys Glu Asn Lys Gly Lys Glu Thr Ser
    50   55   60
Leu Cys Ala Pro Ser Leu Pro Asn Lys His Glu Ser Asp Val Leu Gln
65   70   75   80
Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
            85   90   95
Lys Lys Lys Lys Lys Lys
            100

<210> 5101
<211> 1711
<212> DNA
<213> Homo sapiens

<400> 5101
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                                    4287

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<210> 5102
<211> 436
<212> PRT
<213> Homo sapiens

<400> 5102
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Tyr Arg Glu Arg Asp Ser Glu Arg Ala Pro Ala Ser Val Pro Glu Thr
            20                  25                  30
Pro Thr Ala Val Thr Ala Pro His Ser Ser Ser Trp Asp Thr Tyr Tyr
            35                  40                  45
Gln Pro Arg Ala Leu Glu Lys His Ala Asp Ser Ile Leu Ala Leu Ala
        50                  55                  60
Ser Val Phe Trp Ser Ile Ser Tyr Tyr Ser Ser Pro Phe Ala Phe Phe
65              70                  75                  80
Tyr Leu Tyr Arg Lys Gly Tyr Leu Ser Leu Ser Lys Val Val Pro Phe
            85                  90                  95
Ser His Tyr Ala Gly Thr Leu Leu Leu Leu Leu Ala Gly Val Ala Cys
            100                 105                 110
Leu Arg Gly Ile Gly Arg Trp Thr Asn Pro Gln Tyr Arg Gln Phe Ile
            115                 120                 125
Thr Ile Leu Glu Ala Thr His Arg Asn Gln Ser Ser Glu Asn Lys Arg
        130                 135                 140
Gln Leu Ala Asn Tyr Asn Phe Asp Phe Arg Ser Trp Pro Val Asp Phe
145                 150                 155                 160
His Trp Glu Glu Pro Ser Ser Arg Lys Glu Ser Arg Gly Gly Pro Ser
```

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              165                    170                   175
Arg Arg Gly Val Ala Leu Leu Arg Pro Glu Pro Leu His Arg Gly Thr
              180                    185                   190
Ala Asp Thr Leu Leu Asn Arg Val Lys Lys Leu Pro Cys Gln Ile Thr
              195                    200                   205
Ser Tyr Leu Val Ala His Thr Leu Gly Arg Arg Met Leu Tyr Pro Gly
              210                    215                   220
Ser Val Tyr Leu Leu Gln Lys Ala Leu Met Pro Ala Leu Leu Gln Gly
          225                    230                   235              240
Gln Ala Arg Leu Val Glu Glu Cys Asn Gly Arg Arg Ala Lys Leu Leu
              245                    250                   255
Ala Cys Asp Gly Asn Glu Ile Asp Thr Met Phe Val Asp Arg Arg Gly
              260                    265                   270
Thr Ala Glu Pro Gln Gly Gln Lys Leu Val Ile Cys Cys Glu Gly Asn
              275                    280                   285
Ala Gly Phe Tyr Glu Val Gly Cys Val Ser Thr Pro Leu Glu Ala Gly
          290                    295                   300
Tyr Ser Val Leu Gly Trp Asn His Pro Gly Phe Ala Gly Ser Thr Gly
      305                    310                    315                 320
Val Pro Phe Pro Gln Asn Glu Ala Asn Ala Met Asp Val Val Val Gln
              325                    330                   335
Phe Ala Ile His Arg Leu Gly Phe Gln Pro Gln Asp Ile Val Ile Tyr
              340                    345                   350
Ala Trp Ser Ile Gly Gly Phe Thr Ala Thr Trp Ala Ala Met Ser Tyr
          355                    360                   365
Pro Asp Val Ser Ala Met Ile Leu Asp Ala Ser Phe Asp Asp Leu Val
          370                    375                    380
Pro Leu Ala Leu Lys Val Met Pro Asp Ser Trp Arg Gly Leu Val Thr
      385                    390                    395                 400
Arg Thr Val Arg Gln His Leu Asn Leu Asn Asn Ala Glu Gln Leu Cys
              405                    410                   415
Arg Tyr Gln Gly Pro Val Leu Leu Ile Arg Arg Thr Lys Asp Glu Ile
              420                    425                   430
Ile Thr Thr Thr
              435
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<210> 5103
<211> 1982
<212> DNA
<213> Homo sapiens

<400> 5103
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120
aatttaggcc aatacataac tagatttgaa taaagtcaga tgaagcaata attcctcctc
180
tgtgtttgaa aggaatgagt gtggttacaa agtcacagga tgagtccctg ggatctgggg
240
tgggagaagg ggtggatcaa gaatgacttg ggtttgtcac tccctagcag gctgagggcg
300
tgacacagca gctcggtggc ggagaggtct attctagttt ctaacactcc aatgctaact
360

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ttttggatgt atttccttct agcatgtaga aagggctttt cttggctgcc aggaagtagg
420
gagcagggat gtggcatggt gatgatctga ggacagccag gcatatgctc agacactttg
480
gaaaactggg gagggggaac agggagacag aatcttcatc ttcttccttt tgtgaactgg
540
ggaggagggt gcttggtgac attttcctga gtataaagaa ggaatacagg tttgaaaggt
600
ttgtaattgt atatgaaaac aggtattgaa aaccaatact gggggaaaaa aggcattgta
660
aacacttcta tttaaaatga agatttctgg aacaactata ctatatagtg gtatcacaag
720
tctttagctg gtaagatcta gcactgaaac aactcttaat ttttaacttg tgagggttct
780
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900
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960
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1080
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1140
tggaaccagt tttaacaatc tctgaaaact ttaaattcta gacatgttta ttttgaaaca
1200
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1260
cttgccaaga catcctcctt tgcacttgtt tcctcaagag ttgctaggtc attttttttg
1320
cctgtggcca gcagcctctt taaaaacaac aaaggaccta atgtcaaagt cactctcagg
1380
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1440
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1500
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1560
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1680
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1740
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1800
tctattgctt tcctctccag ctcctgatcc tcttccatcg ctggggcggt ttctggatcc
1860
tcaggtggtg ctggcggatc ggggggctctg tcccatagcg cgaggcgcgg aggcgaagca
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1980
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gg
1982

<210> 5104
<211> 167
<212> PRT
<213> Homo sapiens

<400> 5104
Met Phe Ile Leu Lys His Thr Ser Lys Gln Asp Lys Gln Gln Tyr Val
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Ser Leu Leu His Cys Arg Ser Ser Leu Asn Leu Pro Arg His Pro Pro
            20   25   30
Leu His Leu Phe Pro Gln Glu Leu Leu Gly His Phe Phe Cys Leu Trp
            35   40   45
Pro Ala Ala Ser Leu Lys Thr Thr Lys Asp Leu Met Ser Lys Ser Leu
        50   55   60
Ser Gly Val Cys Pro Ala Ser Ser Gly Leu Leu Arg Thr Pro His Pro
65   70   75   80
Glu Gly Ala Arg Arg Pro Ala Gly Leu Ala Gly Pro Gly Ser Ser Leu
                85   90   95
Thr Ala Gly Trp Thr Ala Phe Arg Thr Cys Pro Gly Cys Ser Ala Phe
            100   105   110
Val Ala Gly Ser Asn Trp Arg Asn Leu Glu Arg Gly Ser Cys Ala Cys
            115   120   125
Lys Asp Gly Phe Cys Val Ser Ser Gly Phe Leu Leu Ser Gly Pro Gly
        130   135   140
Ser Ser Leu Val Pro Tyr Arg Pro Leu Phe Val His Gly Leu Ala Leu
145   150   155   160
Tyr Glu Arg Ala Met Cys Phe
                165

<210> 5105
<211> 1359
<212> DNA
<213> Homo sapiens

<400> 5105
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120
tccagttccc cccacaccca gcaaagtgga caagaccccc cagaggtggt tctctctgtt
180
ctggcttgtt gcaggttcgg agggcagccc tgagtgtctg ccatccgctc aactcagtgt
240
tttcctttc cgcagacct cgcgacctgt gtcagcagag ccgccctgca ccaccatgtg
300
catcatcttc tttaagtttg atcctcgccc tgtttccaaa aacgcgtaca ggctcatctt
360
ggcagccaac agggatgaat tctacagccg accctccaag ttagctgact tctgggggaa
420
caacaacgag atcctcagtg ggctggacat ggaggaaggc aaggaaggag gcacatggct
480

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gggcatcagc acacgtggca agctggcagc actcaccaac tacctgcagc cgcagctgga
540
ctggcaggcc cgagggcgag cacagcaaag ggagacgtca tttgctacta tgggaaccga
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ggggagcctg atcctatcgt tttgacgccc ggcacgtacg ggctgagcaa cgcgctgctg
660
gagactccct ggaggaagct gtgctttggg aagcagctct tcctggaggc tgtggaacgg
720
agccaggcgc tgcccaagga tgtgctcatc gccagcctcc tggatgtgct caacaatgaa
780
gaggcgcagc tgccagaccc ggccatcgag accagggtg gggagtacgt gcagcccatg
840
ctgagcaagt acgcggctgt gtgcgtgcgc tgccctggct acggcaccag aaccaacact
900
atcatcctgg tagatgcgga cggccacgtg accttcactg agcgtagcat gatggacaag
960
gacctctccc actgggagac cagaacctat gagttcacac tgcagagcta accccacctc
1020
tgggcctggc cagtgggctc ctggggggcc ctgccttgag gggcactgtg acaggaaac
1080
cttcctttgc catactgcat tgcactgccc gtggcttggc cagcatcccc cggatcaggg
1140
ccctgtggtt tgcgtgttac ccatctgtgt ccccatgccc agttcagggt ctgcctttat
1200
gccagtgagg agcagcagag tctgatacta ggtctaggac cggccgaggt ataccatgaa
1260
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1320
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1359


<210> 5106
<211> 178
<212> PRT
<213> Homo sapiens

<400> 5106
Met Ala Gly His Gln His Thr Trp Gln Ala Gly Ser Thr His Gln Leu
1               5                   10                  15
Pro Ala Ala Ala Ala Gly Leu Ala Gly Pro Arg Ala Ser Thr Ala Lys
            20                  25                  30
Gly Asp Val Ile Cys Tyr Tyr Gly Asn Arg Gly Glu Pro Asp Pro Ile
            35                  40                  45
Val Leu Thr Pro Gly Thr Tyr Gly Leu Ser Asn Ala Leu Leu Glu Thr
        50                  55                  60
Pro Trp Arg Lys Leu Cys Phe Gly Lys Gln Leu Phe Leu Glu Ala Val
65                  70                  75                  80
Glu Arg Ser Gln Ala Leu Pro Lys Asp Val Leu Ile Ala Ser Leu Leu
                85                  90                  95
Asp Val Leu Asn Asn Glu Glu Ala Gln Leu Pro Asp Pro Ala Ile Glu
            100                 105                 110
Asp Gln Gly Gly Glu Tyr Val Gln Pro Met Leu Ser Lys Tyr Ala Ala
            115                 120                 125
Val Cys Val Arg Cys Pro Gly Tyr Gly Thr Arg Thr Asn Thr Ile Ile
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4292

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        130                135                140
Leu Val Asp Ala Asp Gly His Val Thr Phe Thr Glu Arg Ser Met Met
145                150                155                160
Asp Lys Asp Leu Ser His Trp Glu Thr Arg Thr Tyr Glu Phe Thr Leu
                165                170                175
Gln Ser
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<210> 5107
<211> 1207
<212> DNA
<213> Homo sapiens

<400> 5107

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acagggatga ccaccacctg gaacggggac agccacagtg gccatttccc cccgcagctt
180
tctgccagca ctcccaacag tctttccaca gaaccgagca ctgctcggtg aatgaggact
240
ggacgctcca gggcacccgc cccagttgt atttatttat ttatttattt atttagagac
300
agagtctcgc tctgtcgcnc taggggggtg cagtggcgca atctcagctc actgcaacct
360
ccacctcccg ggttcaagcg attctcctgc ctcagcctcc tgagtagctg ggattacagg
420
cgtgtgccac catgcccggc taattttgt attttagta gagacagggt ttcaccgtgt
480
tagccagggt ggtcttgatc tcctgacctc atgatccgtc cgcctcagcc tcccagagtg
540
ctgggattac aggcatgagc cactgcgcct ggcccaattt attttttttt gtagtttcat
600
tctcctcaca tccaaacagc tacagcttcc ctccttttgt ggggtcccca aaccaagtct
660
cttttcagga gagcagacat gtgcctccac acagttctga agttctgggg gctccacatt
720
gtcagctggg ttggggtctc ccatgtgagg gaggctgatg gcactcgcag gttttttgcct
780
catctatgta caaaggctca gaaaatttct tcggcatttg ggaccctcgt gttctgtagc
840
tccaccagtc gctgcacagc ctcaggcaag tcccactccc caaggcgacg attatctcga
900
gtccgaatgt tcactgttct cttactttgc tctttctggc caaccacaaa ctgaaaattg
960
tagtgggcaa gctgggcccg gcggattctc cggctgaggg tcagtccaga gtctgcatcc
1020
aggtcactga ccagtcctgc agcccgcagg ctctgctgtg cctctttggc gtattcctct
1080
tgctcactcc ccacagggat gaccaccacc tggaacgggg acagccacag tggccccctta
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1200
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ggccggc
1207

<210> 5108
<211> 83
<212> PRT
<213> Homo sapiens

<400> 5108
Met Arg Thr Gly Arg Ser Arg Ala Pro Ala Pro Val Cys Ile Tyr Leu
1   5   10   15
Phe Ile Tyr Leu Phe Arg Asp Arg Val Ser Leu Cys Arg Xaa Arg Gly
            20   25   30
Val Gln Trp Arg Asn Leu Ser Ser Leu Gln Pro Pro Pro Pro Gly Phe
        35   40   45
Lys Arg Phe Ser Cys Leu Ser Leu Leu Ser Ser Trp Asp Tyr Arg Arg
    50   55   60
Val Pro Pro Cys Pro Ala Asn Phe Cys Ile Phe Ser Arg Asp Arg Val
65   70   75   80
Ser Pro Cys

<210> 5109
<211> 651
<212> DNA
<213> Homo sapiens

<400> 5109
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120
caagcatggc aggaagcttc agataattgt tttatggatt ctgacatcaa agtacttgaa
180
gatcagtttg atgaaatcat agtagatata gccacaaaac gtaagcagta tcccagaaag
240
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300
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360
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480
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540
ctcaggatgc agcctgttat ccacctccag aggattcacc aagaagtctt ttccagttgt
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cataggaaac agatgctaa acctgagaac tttataacac agatagaaac c
651

<210> 5110
<211> 206
<212> PRT

4294

<213> Homo sapiens

<400> 5110
Leu Leu Glu Lys Ile Arg Glu Pro Ala Leu Gln Xaa Ala Gln Trp Thr
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Phe Glu Ser Ala Val Gln Glu Asn Ile Ser Ile Asn Gly Gln Ala Trp
            20   25   30
Gln Glu Ala Ser Asp Asn Cys Phe Met Asp Ser Asp Ile Lys Val Leu
        35   40   45
Glu Asp Gln Phe Asp Glu Ile Ile Val Asp Ile Ala Thr Lys Arg Lys
    50   55   60
Gln Tyr Pro Arg Lys Ile Leu Glu Cys Val Ile Lys Thr Ile Lys Ala
65   70   75   80
Lys Gln Glu Ile Leu Lys Gln Tyr His Pro Val Val His Pro Leu Asp
                85   90   95
Leu Lys Tyr Asp Pro Asp Pro Val Leu Asn Gly Asn Ala Phe Asn Phe
                100   105   110
Ser Pro Phe Asn Met Met Leu Ala Val Asp Leu Ser Tyr Met Val Phe
            115   120   125
Ile Thr Ser Ala Pro His Met Glu Asn Leu Lys Cys Arg Gly Glu Thr
        130   135   140
Val Ala Lys Glu Ile Ser Glu Ala Met Lys Ser Leu Pro Ala Leu Ile
145   150   155   160
Glu Gln Gly Glu Gly Phe Ser Gln Val Leu Arg Met Gln Pro Val Ile
                165   170   175
His Leu Gln Arg Ile His Gln Glu Val Phe Ser Ser Cys His Arg Lys
            180   185   190
Pro Asp Ala Lys Pro Glu Asn Phe Ile Thr Gln Ile Glu Thr
            195   200   205

<210> 5111
<211> 2247
<212> DNA
<213> Homo sapiens

<400> 5111
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caaatgaacc aacggtctcc gcagcgccgc ccgcgcagg cgcaagccgc cgccgagtcc
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420
tgggtgacaa ccgcgcgccc cacctttccc cacgtggccg cgaagaccgg ctcaggagca
480
tctatcggct gcacgccaac atcaacacag gcgaagatgg tctccaagcg cattgcccag
540

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660
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720
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780
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840
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960
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2100
gagccttgta gggaggcctc tacacagaag aaagcagccc ccatgtccca gccacttctg
2160
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2247

<210> 5112
<211> 581
<212> PRT
<213> Homo sapiens

<400> 5112
Ala Lys His Phe Pro Ala Gly Gly Gly Asp His Arg Glu Arg Pro Gly
1   5   10   15
Arg Gly Gly Lys Asp Ala Ser Val Ala His Glu Val Ala Ser Leu Ala
            20   25   30
Leu Pro Trp Phe Ala Val Val Leu Gly Tyr Arg Glu Arg Pro Arg Val
            35   40   45
Ser Gly Arg Pro Ser Leu Gly Ala Pro Gln Arg Leu Arg Ala Tyr Gly
        50   55   60
Gly Arg Lys Gly Leu Glu Ala Ala Pro Trp Val Thr Thr Ala Arg Pro
65   70   75   80
Thr Phe Pro His Val Ala Ala Lys Thr Gly Ser Gly Ala Ser Ile Gly
                85   90   95
Cys Thr Pro Thr Ser Thr Gln Ala Lys Met Val Ser Lys Arg Ile Ala
            100   105   110
Gln Glu Thr Phe Asp Ala Ala Val Arg Glu Asn Ile Glu Glu Phe Ala
        115   120   125
Met Gly Pro Glu Glu Ala Val Lys Glu Ala Val Glu Gln Phe Glu Ser
        130   135   140
Gln Gly Val Asp Leu Ser Asn Ile Val Lys Thr Ala Pro Lys Val Ser
145   150   155   160
Ala Asp Gly Ser Gln Glu Pro Thr His Asp Ile Leu Gln Met Leu Ser
                165   170   175
Asp Leu Gln Glu Ser Val Ala Ser Ser Arg Pro Gln Glu Val Ser Ala
            180   185   190
Tyr Leu Thr Arg Phe Cys Asp Gln Cys Lys Gln Asp Lys Ala Cys Arg
        195   200   205
Phe Leu Ala Ala Gln Lys Gly Ala Tyr Pro Ile Ile Phe Thr Ala Arg
        210   215   220
Lys Leu Ala Thr Ala Gly Asp Gln Gly Leu Leu Leu Gln Ser Leu Asn
225   230   235   240
Ala Leu Ser Val Leu Thr Asp Gly Gln Pro Asp Leu Leu Asp Ala Gln
                245   250   255
Gly Leu Gln Leu Leu Val Ala Thr Leu Thr Gln Asn Ala Asp Glu Ala
            260   265   270
Asp Leu Thr Cys Ser Gly Ile Arg Cys Val Arg His Ala Cys Leu Lys
        275   280   285
His Glu Gln Asn Arg Gln Asp Leu Val Lys Ala Gly Val Leu Pro Leu
        290   295   300
Leu Thr Gly Ala Ile Thr His His Gly His His Thr Asp Val Val Arg
305   310   315   320
Glu Ala Cys Trp Ala Leu Arg Val Met Thr Phe Asp Asp Asp Ile Arg
                325   330   335
Val Pro Phe Gly His Ala His Asn His Ala Lys Met Ile Val Gln Glu

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            340                    345                    350
Asn Lys Gly Leu Lys Val Leu Ile Glu Ala Thr Lys Ala Phe Leu Asp
            355                    360                    365
Asn Pro Gly Ile Leu Ser Glu Leu Cys Gly Thr Leu Ser Arg Leu Ala
        370                    375                    380
Ile Arg Asn Glu Phe Cys Gln Glu Val Val Asp Leu Gly Gly Leu Ser
385                    390                    395                    400
Ile Leu Val Ser Leu Leu Ala Asp Cys Asn Asp His Gln Met Arg Asp
                405                    410                    415
Gln Ser Gly Val Gln Glu Leu Val Lys Gln Val Leu Ser Thr Leu Arg
            420                    425                    430
Ala Ile Ala Gly Asn Asp Asp Val Lys Asp Ala Ile Val Arg Ala Gly
        435                    440                    445
Gly Thr Glu Ser Ile Val Ala Ala Met Thr Gln His Leu Thr Ser Pro
    450                    455                    460
Gln Val Trp Glu Gln Ser Cys Ala Ala Leu Cys Phe Leu Ala Leu Arg
465                    470                    475                    480
Lys Pro Asp Asn Ser Arg Ile Ile Val Glu Gly Gly Gly Ala Val Ala
                485                    490                    495
Ala Leu Gln Ala Met Lys Ala His Pro Gln Lys Ala Gly Val Gln Lys
            500                    505                    510
Gln Ala Cys Met Leu Ile Arg Asn Leu Val Ala His Gly Gln Ala Phe
        515                    520                    525
Ser Lys Pro Ile Leu Asp Leu Gly Ala Glu Ala Leu Ile Met Gln Ala
    530                    535                    540
Arg Ser Ala His Arg Asp Cys Glu Asp Val Ala Lys Ala Ala Leu Arg
545                    550                    555                    560
Asp Leu Gly Cys His Val Glu Leu Arg Glu Leu Trp Thr Gly Gln Arg
                565                    570                    575
Gly Asn Leu Ala Pro
                580


<210> 5113
<211> 472
<212> DNA
<213> Homo sapiens

<400> 5113
cagactatgg tccagcctct gctccatgtg ccccctgtgg gtctttgtga tctcagtcct
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ggcaccttga cccgctgctt gttctgctct cctttaaact ccatgcacct gacacctgta
120
attggcacgc agcgcggagc ctggcacctg cagtgtagac acactggcca ccgctcagtg
180
caagagggcc cctttgctaa tgtgcacagc tctttatgcc tttttcccta tgcctttttg
240
gattggagca agagattttt ttttccaagt aaagaacaat ttatgttcct aaatactttt
300
tttccttgac atgatgaagt tgagcaaggt ggctatagaa cttttttttct taatttt att
360
gcccaagtaa tgttctttac aaagtaggga aatacagata cataaaaaga agactgccaa
420
tcccccgtaa tcccaccagt cgcatcccta cccgctctta ggagattccg ga
472
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<210> 5114
<211> 100
<212> PRT
<213> Homo sapiens

<400> 5114
Met Val Gln Pro Leu Leu His Val Pro Pro Val Gly Leu Cys Asp Leu
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Ser Pro Gly Thr Leu Thr Arg Cys Leu Phe Cys Ser Pro Leu Asn Ser
               20   25   30
Met His Leu Thr Pro Val Ile Gly Thr Gln Arg Gly Ala Trp His Leu
           35   40   45
Gln Cys Arg His Thr Gly His Arg Ser Val Gln Glu Gly Pro Phe Ala
    50   55   60
Asn Val His Ser Ser Leu Cys Leu Phe Ser Tyr Ala Phe Leu Asp Trp
65   70   75   80
Ser Lys Arg Phe Phe Phe Pro Ser Lys Glu Gln Phe Met Phe Leu Asn
               85   90   95
Thr Phe Phe Pro
               100

<210> 5115
<211> 1003
<212> DNA
<213> Homo sapiens

<400> 5115
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ttttatttac aaaatatata ctgaatacta tacatctggc cccatcacca tggaaacaac
120
tccaaagcct gcctggggat ttgtgcccaa gcccagccca ggagggctag agaaagcaaa
180
ggtgtctacc agccgccgcc atcccagaag gaaagcctct tcccatgagt gcctgtgggt
240
gggcggtgag ctcaacaccc acaaagggca gaaggcctgg gggcagtgag gtgatggtga
300
gggcatggga agcagatgct gctgagggtg ggtggaggga gaaatggaga cccagcaccc
360
agcagggga gccaggtgac agcaggggaa gcagatggca gggccccagg cagtccagga
420
ccccaggctc tgaagggtgg ggcaaggggg tcaggtcacg tcttgacatc cagcagtggc
480
tccgcttgtg ctggtagccc actctgccca gccatgtccc accttggggt ctcccatgtc
540
agagagcagc tcctgctcag catcatgcag ttcctcagct gggtcatagc tgtacatggg
600
gagcaggtgc atgcgcagcc ggtccacccg cttttcttc tgtacataca ttaccacagc
660
caccaccacc ccgaccaggg tgatgaggaa gaagggcccc aacacatagc ccaccatgga
720
gtcgctgttg gcctgggggg cattgggcac agtggtgtta ctcatgacat cagcagccgg
780

agggctgggt ggtcagcatg ggcagtggcg cttcgggagg gcgcctccac tgggctcccc
840
agtcgtatgc tcatcgtccc aggtcaaggg ggcatgccag ggtggggagg gcgtcaggcc
900
gctgctagga tgcgggccag caacagcgga ncaggaggtg gttcccacgg cgctgggnag
960
gctcacgccg gaggtggggg tgttggggga tgctgatggg tcg
1003

<210> 5116
<211> 226
<212> PRT
<213> Homo sapiens

<400> 5116
Met Leu Leu Arg Val Gly Gly Gly Arg Asn Gly Asp Pro Ala Pro Ser
 1   5   10   15
Arg Gly Ser Gln Val Thr Ala Gly Glu Ala Asp Gly Arg Ala Pro Gly
            20   25   30
Ser Pro Gly Pro Gln Ala Leu Lys Gly Gly Ala Arg Gly Ser Gly His
            35   40   45
Val Leu Thr Ser Ser Ser Gly Ser Ala Cys Ala Gly Ser Pro Leu Cys
    50   55   60
Pro Ala Met Ser His Leu Gly Val Ser His Val Arg Glu Gln Leu Leu
65   70   75   80
Leu Ser Ile Met Gln Phe Leu Ser Trp Val Ile Ala Val His Gly Glu
                85   90   95
Gln Val His Ala Gln Pro Val His Pro Leu Phe Leu Leu Tyr Ile His
            100   105   110
Tyr His Ser His His His Pro Asp Gln Gly Asp Glu Glu Glu Gly Pro
            115   120   125
Gln His Ile Ala His His Gly Val Ala Val Gly Leu Gly Gly Ile Gly
            130   135   140
His Ser Gly Val Thr His Asp Ile Ser Ser Arg Arg Ala Gly Trp Ser
145   150   155   160
Ala Trp Ala Val Ala Leu Arg Glu Gly Ala Ser Thr Gly Leu Pro Ser
                165   170   175
Arg Met Leu Ile Val Pro Gly Gln Gly Gly Met Pro Gly Trp Gly Gly
            180   185   190
Arg Gln Ala Ala Ala Arg Met Arg Ala Ser Asn Ser Gly Xaa Gly Gly
            195   200   205
Gly Ser His Gly Ala Gly Xaa Ala His Ala Gly Gly Gly Gly Val Gly
            210   215   220
Gly Cys
225

<210> 5117
<211> 1180
<212> DNA
<213> Homo sapiens

<400> 5117
nngaattcaa cttgttcaag agaaggtctt gtacgtgcct aagttctaga gcctcctgac
60

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gtgagcatgg ctgagagtga ggaccgctcc ctgaggatcg ttctggtagg gaaaactgga
120
agtgggaaaa gtgcaacagc gaacaccatc cttggagagg aaatctttga ttctagaatt
180
gctgcccaag ctgttaccaa gaactgtcaa aaagcatccc gggaatggca ggggagagac
240
cttcttgttg tagacactcc agggctcttt gacaccaagg agagcctgga caccacctgc
300
aaggaaatca gccgctgcat catctcctcc tgcccagggc cccatgctat tgtcctagtt
360
ctgctgctgg gccgctacac agaggaggag cagaaaaccg ttgcattgat caaggctgtc
420
tttgggaagt cagccatgaa gcacatggtc atcttgttca ctcgcaaaga gagttggag
480
ggccagagct ccatgacttc catagcagat gcggatgtgg gcctaaaaag catcgtcaag
540
gagtgcggga accgctgctg tgcctttagc aacagcaaga aaaccagtaa ggcagagaag
600
gaaagtcaag tgcaggagtt ggtggagctg atagagaaaa tggtgcagtg caacgaaggg
660
gcttactttt ctgatgacat atacaaggac acagaggaaa ggctgaaaca acgggaagag
720
gttttgagga aaatctacac tgaccaatta aatgagaaa ttaaactagt agaagaggat
780
aagcataaat cagaggaaga aaaggagaaa gaaattaaat tactaaaatt aaaatatgat
840
gaaaaaataa aaaatataag ggaagaagct gagagaaata tatttaaaga tgttttaat
900
aggatttgga agatgctttc agaaatatgg cataggtttt tgtcgaaatg taagtttat
960
tcttcctaat ttactgtgat ttgttaatgg atgaattgta ttttgcaaag atagttagag
1020
aaatacctcc ttcccttag ctttattaag gtatcattga taaataaaaa taaaatatgt
1080
ttaatgtata taatgtgatt tttaaatata tatatatata tatacacaca ttgtgaaata
1140
atgaaataaa ggtaattaac acatctaaaa aaaaaaaaa
1180
```

```
<210> 5118
<211> 300
<212> PRT
<213> Homo sapiens
```

```
<400> 5118
Met Ala Glu Ser Glu Asp Arg Ser Leu Arg Ile Val Leu Val Gly Lys
1               5                   10                  15
Thr Gly Ser Gly Lys Ser Ala Thr Ala Asn Thr Ile Leu Gly Glu Glu
            20                  25                  30
Ile Phe Asp Ser Arg Ile Ala Ala Gln Ala Val Thr Lys Asn Cys Gln
        35                  40                  45
Lys Ala Ser Arg Glu Trp Gln Gly Arg Asp Leu Leu Val Val Asp Thr
    50                  55                  60
Pro Gly Leu Phe Asp Thr Lys Glu Ser Leu Asp Thr Thr Cys Lys Glu
```

```
65                          70                          75                          80
Ile Ser Arg Cys Ile Ile Ser Ser Cys Pro Gly Pro His Ala Ile Val
                    85                          90                          95
Leu Val Leu Leu Leu Gly Arg Tyr Thr Glu Glu Glu Gln Lys Thr Val
                100                         105                         110
Ala Leu Ile Lys Ala Val Phe Gly Lys Ser Ala Met Lys His Met Val
                115                         120                         125
Ile Leu Phe Thr Arg Lys Glu Glu Leu Glu Gly Gln Ser Phe His Asp
        130                         135                         140
Phe Ile Ala Asp Ala Asp Val Gly Leu Lys Ser Ile Val Lys Glu Cys
145                         150                         155                         160
Gly Asn Arg Cys Cys Ala Phe Ser Asn Ser Lys Lys Thr Ser Lys Ala
                165                         170                         175
Glu Lys Glu Ser Gln Val Gln Glu Leu Val Glu Leu Ile Glu Lys Met
                180                         185                         190
Val Gln Cys Asn Glu Gly Ala Tyr Phe Ser Asp Asp Ile Tyr Lys Asp
                195                         200                         205
Thr Glu Glu Arg Leu Lys Gln Arg Glu Glu Val Leu Arg Lys Ile Tyr
        210                         215                         220
Thr Asp Gln Leu Asn Glu Glu Ile Lys Leu Val Glu Glu Asp Lys His
225                         230                         235                         240
Lys Ser Glu Glu Glu Lys Glu Lys Glu Ile Lys Leu Leu Lys Leu Lys
                245                         250                         255
Tyr Asp Glu Lys Ile Lys Asn Ile Arg Glu Glu Ala Glu Arg Asn Ile
                260                         265                         270
Phe Lys Asp Val Phe Asn Arg Ile Trp Lys Met Leu Ser Glu Ile Trp
        275                         280                         285
His Arg Phe Leu Ser Lys Cys Lys Phe Tyr Ser Ser
        290                         295                         300
```

```
<210> 5119
<211> 1450
<212> DNA
<213> Homo sapiens

<400> 5119
nnaatgatga atatcaaaga ttaaagcact tcactaaatc ttgtattttt tcccaaaata
60
cagctggtga aaatcttatc cttgagtaga aaggaatcaa acaagtcata taccacccgt
120
cttcctgtct gtactggaac catcacaggc ttttgaggaa ctacttttga accgttcccc
180
agagaggcat ttgccccagt agctatgatt ataatttgca atgacagcca cagtgatttc
240
atccttctgg gcttctctaa caagccacat ttggagaaga tacttttttng gatcattttt
300
attttttatt ttttgactct tgcaggaaat atggtcatag ttcttgtgtc cttgaaggat
360
ccaaaactcc acatccctat gtatttcttt ctttccaacc tttccttggt agacctctgt
420
ttgaccagca gctgtgttcc acagatgttg attaacttct ggggcccaga aaagaccatc
480
agctacattg gctgtgccat tcaactctat gttttttttgt ggcttggggc cacggaatat
540
```

gtccttcttg ttgtcatggc tgtggattgt tatgtagcag tgtgtcatcc actgcaaaat
600
accatgatca tgcacccaaa actttgtctg cagctggcta tcttggcatg ggggactggc
660
ttggcccagt ctctgatcca gtcccctgcc accctccggt tacccttctg ctcccagcgg
720
atggtggatg atgttgtttg tgaagtccca gctctgattc agctctccag tactgatact
780
acctacagtg aaattcagat gtctatcgcc agtgttgtcc tcctggtgat gcccttgatc
840
attatccttt cctcttctgg tgctattgct aaggctgtgc tgagaattaa gtcaactgca
900
ggacagaaga aagcatttgg cacctgcatc tctcaccttc ttgtggtttc tctctttat
960
ggcactgtca caggtgtcta ccttcaacca aaaaatcact atcctcatga atggggcaaa
1020
tttctcactc ttttctacac tgtagtaacc ccaactctta atcccctcat ctacactcta
1080
aggaacaagg aggtaaaggg agcactaata agattgggga ggaggacctg ggattcccag
1140
aataactaac aaggttaaca tatgtttacc tttgcttaac ctaagaatag agaacaacct
1200
catcacaaaa agctggagat acacctccta agccaaaagt aggagagaaa gagctgcatt
1260
ctgttcaggt tgagatttca gtttccttca tcaatcaatt gggcccttaa attcttcata
1320
ttgtggattt agacacagta tggtataaaa attaatatat ttaatagcta ttgtcttgaa
1380
aaggacacaa tgcaattgaa tgggggagga ggagaagaca caagaaacac attacttgca
1440
aaataaaata
1450

<210> 5120
<211> 314
<212> PRT
<213> Homo sapiens

<400> 5120
Met Ile Ile Ile Cys Asn Asp Ser His Ser Asp Phe Ile Leu Leu Gly
1   5   10   15
Phe Ser Asn Lys Pro His Leu Glu Lys Ile Leu Phe Xaa Ile Ile Phe
            20   25   30
Ile Phe Tyr Phe Leu Thr Leu Ala Gly Asn Met Val Ile Val Leu Val
            35   40   45
Ser Leu Lys Asp Pro Lys Leu His Ile Pro Met Tyr Phe Phe Leu Ser
        50   55   60
Asn Leu Ser Leu Val Asp Leu Cys Leu Thr Ser Ser Cys Val Pro Gln
65   70   75   80
Met Leu Ile Asn Phe Trp Gly Pro Glu Lys Thr Ile Ser Tyr Ile Gly
                85   90   95
Cys Ala Ile Gln Leu Tyr Val Phe Leu Trp Leu Gly Ala Thr Glu Tyr
                100   105   110
Val Leu Leu Val Val Met Ala Val Asp Cys Tyr Val Ala Val Cys His

4303

```
                115                    120                    125
Pro Leu Gln Asn Thr Met Ile Met His Pro Lys Leu Cys Leu Gln Leu
        130                    135                    140
Ala Ile Leu Ala Trp Gly Thr Gly Leu Ala Gln Ser Leu Ile Gln Ser
145                    150                    155                    160
Pro Ala Thr Leu Arg Leu Pro Phe Cys Ser Gln Arg Met Val Asp Asp
                165                    170                    175
Val Val Cys Glu Val Pro Ala Leu Ile Gln Leu Ser Ser Thr Asp Thr
            180                    185                    190
Thr Tyr Ser Glu Ile Gln Met Ser Ile Ala Ser Val Val Leu Leu Val
        195                    200                    205
Met Pro Leu Ile Ile Ile Leu Ser Ser Ser Gly Ala Ile Ala Lys Ala
    210                    215                    220
Val Leu Arg Ile Lys Ser Thr Ala Gly Gln Lys Lys Ala Phe Gly Thr
225                    230                    235                    240
Cys Ile Ser His Leu Leu Val Val Ser Leu Phe Tyr Gly Thr Val Thr
                245                    250                    255
Gly Val Tyr Leu Gln Pro Lys Asn His Tyr Pro His Glu Trp Gly Lys
            260                    265                    270
Phe Leu Thr Leu Phe Tyr Thr Val Val Thr Pro Thr Leu Asn Pro Leu
        275                    280                    285
Ile Tyr Thr Leu Arg Asn Lys Glu Val Lys Gly Ala Leu Ile Arg Leu
    290                    295                    300
Gly Arg Arg Thr Trp Asp Ser Gln Asn Asn
305                    310
```

<210> 5121
<211> 944
<212> DNA
<213> Homo sapiens

<400> 5121
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nngcgcgcca gggagggcg ccgtgtggca ctcggcggtc gaaaggggag ttcaaggaga
60
cgggggcgac gcggctgagg gcttctcgtc ggggtcgggg ctgcagccgt catgccgggg
120
atagtggagc tgcccactct agaggagctg aaagtagatg aggtgaaaat tagttctgct
180
gtgcttaaag ctgcggccca tcactatgga gctcaatgtg ataagcccaa caaggagttt
240
atgctctgcc gctgggaaga gaaagatccg aggcggtgtt tagaggaagg caaactggtc
300
aacaagtgtg ctttggactt ctttaggcag ataaaacgtc actgtgcaga gccttttaca
360
gaatattgga cttgcattga ttatactggc cagcagttat ttcgtcactg tcgcaaacag
420
caggcaaagt ttgacgagtg tgtgctggac aaactgggct gggtgcggcc tgacctggga
480
gaactgtcaa aggtcaccaa agtgaaaaca gatcgacctt accggagaa tccctatcac
540
tcaagaccaa gaccggatcc cagccctgag atcgagggag atctgcagcc tgccacacat
600
ggcagccgct tttatttctg gaccaagtaa agatgggtcc gtggcccaca ctcggtcatg
660
```

```
tgctcagaca acgactgatg aaaacgccca tgcggtttgc atcgactgat agtgtgttct
720
ttccgggatc acaaacatta acaaaaaagt taacttatgt gacttggcag ttattctata
780
ccatttcctg tccattaaaa ttttaaagg aaacggttgt attttattat gttttatgtg
840
accttttggc ctttaaagat gacttcccct tgctttttc ttcttgtggt cctgcctgtt
900
cctcttgctt tgctttaggc actcgctcat gtggctgggg atcc
944
```

```
<210> 5122
<211> 172
<212> PRT
<213> Homo sapiens
```

```
<400> 5122
Met Pro Gly Ile Val Glu Leu Pro Thr Leu Glu Glu Leu Lys Val Asp
 1               5                  10                  15
Glu Val Lys Ile Ser Ser Ala Val Leu Lys Ala Ala Ala His His Tyr
            20                  25                  30
Gly Ala Gln Cys Asp Lys Pro Asn Lys Glu Phe Met Leu Cys Arg Trp
        35                  40                  45
Glu Glu Lys Asp Pro Arg Arg Cys Leu Glu Glu Gly Lys Leu Val Asn
    50                  55                  60
Lys Cys Ala Leu Asp Phe Phe Arg Gln Ile Lys Arg His Cys Ala Glu
65                  70                  75                  80
Pro Phe Thr Glu Tyr Trp Thr Cys Ile Asp Tyr Thr Gly Gln Gln Leu
                85                  90                  95
Phe Arg His Cys Arg Lys Gln Gln Ala Lys Phe Asp Glu Cys Val Leu
            100                 105                 110
Asp Lys Leu Gly Trp Val Arg Pro Asp Leu Gly Glu Leu Ser Lys Val
            115                 120                 125
Thr Lys Val Lys Thr Asp Arg Pro Leu Pro Glu Asn Pro Tyr His Ser
    130                 135                 140
Arg Pro Arg Pro Asp Pro Ser Pro Glu Ile Glu Gly Asp Leu Gln Pro
145                 150                 155                 160
Ala Thr His Gly Ser Arg Phe Tyr Phe Trp Thr Lys
                165                 170
```

```
<210> 5123
<211> 1139
<212> DNA
<213> Homo sapiens
```

```
<400> 5123
nngtgcacaa ccactgtctt cccgtggcct cactgccccc ttgccctagg gccccttcct
60
tggctctgtg ccagcctcgg gggacctcag gctcaccaac tctgaggctg agagttccaa
120
agccatagga tagatcctgg agcttccctg agcctgtttt cttgcctggg agttagccat
180
gccttgtggg gctgccaaga gggtaaagta gagagatggg tctagcttga tacagtatag
240
```

gcagctgctg gatgtcagct gtggttatga tcagctccat cttgttatga tgaagaccct
300
gaggtcagag tggaccccac cccaaagccc catctggcag ctcacagctg ctctctccta
360
cagaaacagg cttgcatgct gatccgaaac ctggtggccc acggccaggc cttctcgaag
420
cccatcctgg acctggggggc tgaggcactc atcatgcagg cccgatctgc ccaccgtgac
480
tgtgaggacg tggccaaggc cgccctgcgg gacctgggtt gtcatgtcga gctccgagag
540
ctgtggacag gccagagggg caacctggcg ccatgacccc aggcccagtc tgggccgtga
600
ctctgggtga gtcgtgtgac tcaggaatgg gggtagatcc atgtcctcca ctgtccccca.
660
ttagttctgt ccccttcaca atgagaagtg ttttctggca ggccctaggt aaagggtcgg
720
gggagggggg agccttgtag ggaggcctct acacagaaga aagcagcccc catgtcccag
780
ccacttctgg gtcccagcca gcagcacgga tgttactgtc ctgctccttc ccccagcccc
840
acgccctacc agagggggca aagggcacgt cccatcactc actgccctgt ctgaaatgtg
900
gcagccactg tgggccaggc tcagggcagg gcaggcgatt ccagtggggt tgggcccccct
960
ggcgcctgct gcttactgca gtttcatgca ggcctctgct ccttgtcttt cttacctgta
1020
aaatgggtct cagatgctcc gccctgcttg gccccagctt gtctgtctct gggtcctggg
1080
ccagccagga tacctgataa taaaagatca ttgggtgaaa aaaaaaaaaa aaaaaaaa
1139

<210> 5124
<211> 101
<212> PRT
<213> Homo sapiens

<400> 5124
Ser Ala Pro Ser Cys Tyr Asp Glu Asp Pro Glu Val Arg Val Asp Pro
1   5   10   15
Thr Pro Lys Pro His Leu Ala Ala His Ser Cys Ser Leu Leu Gln Lys
            20   25   30
Gln Ala Cys Met Leu Ile Arg Asn Leu Val Ala His Gly Gln Ala Phe
            35   40   45
Ser Lys Pro Ile Leu Asp Leu Gly Ala Glu Ala Leu Ile Met Gln Ala
    50   55   60
Arg Ser Ala His Arg Asp Cys Glu Asp Val Ala Lys Ala Ala Leu Arg
65   70   75   80
Asp Leu Gly Cys His Val Glu Leu Arg Glu Leu Trp Thr Gly Gln Arg
                85   90   95
Gly Asn Leu Ala Pro
            100

<210> 5125
<211> 6244

4306

<212> DNA
<213> Homo sapiens

<400> 5125
ngcccacccg atccaggacc acaccattca tggggatcat agataaaaca gcacggactc
60
agcagtaccc ccacctccac cagcagaatc ggacctgggc agtgtcatct gtggacaccg
120
tcctcagtcc cacgtctcca ggcaacctgc ctcagcctga gtccttcagt ccaccatcat
180
ccatcagcaa cattgccttt tataacaaaa ccaacaatgc acagaatggc catttgctgg
240
aggacgatta ttacagcccc catgggatgc tggctaacgg gtctcgtgga gacctcttgg
300
agcgagtcag ccaggcctcc tcctatcccg acgtgaaggt agctcggact ctacctgtgg
360
ctcaggcata ccaggacaac ctgtacaggc agctgtcccg agactctcgg caagggcaga
420
catcccctat caaaccaaag agaccgttcg tggagtctaa tgtttaaaag acgttttgtt
480
ggagtgagac ccatatgttt tcactgcaca ttttcaggct tggtttccac attcgaggta
540
gttctctggc ttaatttctc atgtagtttc tgtgtggtgt tcagaggtgg cagcccacat
600
gctgaaatcc tttgcatgca gccgactggg aagcggcctc ccgggagcca ggacttcagt
660
ttctcttgtc tgtgcccagc cacatgctct ctccctctct tcagatgcca acgaggagat
720
tttcgtgctg tgtgctttaa cccagggaga tcagacacac tggtcagctt tttccaggag
780
acaatcgctt tcactgatgt tcttgttgtg taattgtctt tttcctttt taaaaaataa
840
ggtgttcttg ttcgttttct tctagaaact ttagaaagag tgcgatgccc ctttgccttt
900
gcatccttag ccagtgtcac ccacacagcc agccgcagcg cattctcatg ctgtggcccc
960
tccccagacc gccagcgccc tgcagccacc aggtctgcag tgtgcattag gattattgct
1020
ggtcttccta gggggtaaaa ggatcagaga gagaagaatt aagtgctaaa ttggaagaaa
1080
accccaatat agttatgtaa aatgtcacta cattgatttt ccaagaggca ttgtaggaac
1140
atgtcaaaaa cagccagccc tttaaatatt gcagtcagcc aaggaaatta gatgagaatt
1200
gtggctatta agagaattca ctgagagtta ttctctagat ttttagccga caattaacca
1260
ctaaaagctg ctgcttttcc agggtggggg agggaatgaa tacatagaaa aacaaaaaag
1320
attgttctgg attctcagtg aaaggctata ggaagtctgt tctggagaca tctacttttt
1380
agatcctgat acatcactga gtgtcatact ccactaaaag gaaactctaa ccgaaggctg
1440
gctggtgtga caatcccgtt agttggatct tcacctacag ccagattttg ctctagtggc
1500

4307

```
cctcttcctg taaacccaga tggcgtcata cagaaattgt ttctttcaga agcagattgg
1560
aatctcttgg gaccatgaga ctgagtccca atatttccac ccagggtcat gcccgttgtt
1620
gtctacttcc attttgagat ctatagtttg attatctatt attacaggaa ctgtttcttt
1680
tcttttttcta ggagtgttta tgagagtgtg atattttaaa gtcagacgca gcaaaaactg
1740
tttcagggtg aagaaagacc cctttcagcc ctgttttgca gccctgggtg ggggcatgag
1800
atagacagca agcttctgat cttgaagctt gtctagaaga cacatcttct aggtctcgtg
1860
gtcatttggt aggctgacct ttgagtgagc gaggccacta ttgagtggat agcaagaaca
1920
ttggaaccaa agcctcggca caggcctggc actggctgta catcagctct tacaactaaa
1980
caactcaact aagcaactga aacgaaacaa aggagcattc gttctctgtt gttaggaatc
2040
attctgctct gttagggaag ggctgcagga agggcagttt cctgaataaa aatctggctg
2100
cgaccagtcc catgtgtctg gtaagtaagt aagtaagtaa gtgccctttg aagggatcat
2160
taagacacag ggagcatgaa cctgagatca gaagcatttc tttactaatt tagattctgc
2220
gaaatagacg gacctctcca cccccaaacc taaaacaggc caggacttgt ctctgtgctg
2280
aaagcaaata gcaagactaa ctcaagcccc agcctctttc cacactccct gatacctaag
2340
gactgctttc tcagctagac cagggtgggc atcagcgacg ccttctcagc tagaccaggg
2400
taggcatcag cgtcctctct ccatctctat acccctctct ctcacatcag gaagatgaaa
2460
tgtgtagctc tagcggcaac ctctagccag gagcccagtg gcctctcaga ttgctttttg
2520
gccaggtctc agcactgctg gcatctttac atcttactcc ttaaaaccgc ctctcgctga
2580
ggagccactg cattttgaag aatttctcag tgtctgtcag gaaagtactc ctgctcattt
2640
ggaacgccac acaccacccg cactcacctg tccaggcgaa tgagcaggtc ctgtagcttt
2700
acaaatatgc cgctgatgcc gcttctcccc agggtctctc agttttccag gacaaaaaga
2760
tttagggcct atacctatg ggcaaaacac ctaaaatgtc aacagtcaaa atgccattct
2820
ttttggccat cataagaggg agtaggtatc actgctgcat gccagttgtt tttgactaga
2880
atatgccaac cagagcttgt tggggcagga gacgtttttc cttacaagca gactgcctgt
2940
gccctgtgcc ctgtttgcta cttcactgcc atggaatgat ccgagtactg tatttcagag
3000
ctgccccttc cccagcagca aacactcgct gagtccatgt ctggcttcag gtgggaggaa
3060
atgtttcaga tgaaacttac tcaattcata ccaccctgaa atggaggaca gaggtgacaa
3120
```

```
acttcagttt aataggtttc tcaccaagtt gtatgttcca ttggcccagg attcttgcac
3180
taatgggttt ctatcacatc atgtctataa atgggtgcac tttactgttt gaatttgtaa
3240
ctgaagtact ggatatttaa gtgtgagtaa tgtcttcatt agaaaatagc agaaccgctc
3300
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aacatttata gcacaagaaa taacttgtat ataagcatca aaaagattaa gaattttta
3420
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3480
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3540
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3600
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3660
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3720
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3780
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3900
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3960
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4020
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4080
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4140
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4200
aaggcaacag aggcctggaa ggggtcttcg tgcatctgtg ccagttgtgc aagacgatct
4260
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4320
gctcccttgc tctggtagag ggatgggtac atggagaagc cccttcttcc ccatgagcct
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4440
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4500
tcactgaatc tttgccacaa aatggaatag gctatcccag ggggcaagag gtgcccgccc
4560
ctgtgcccag cctcctcttg atgctcccag tgcccagcag cctcgcacac cctgcctgtc
4620
tgttcctggg ctgcccattt ctcaagaaac cgacctgcaa aggcagccgg ctgctgcctc
4680
cacaccgagg gctgtgcggt cctgctgctc gctcactggg aggtgcagct ctttctcctc
4740
```

```
ttcctctagg aattccagac cgaccatcta ccatgactaa caacaatgaa caaagggctt
4800
aggggcaaga gctacctgca aagacgtgtc atggaaccct tcaccatgca atgccttgaa
4860
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4920
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4980
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5040
gcctcacagc aggtgagcca ccctgagatg cttgtggcca catggtggcc acagtcagag
5100
ctttgaaagt cagtaccaaa tgaacgcata attggacacc aaaaatcaag tgttactttc
5160
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5220
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5280
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5340
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5400
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5460
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5640
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5700
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5760
tacaattaaa gagtgatttg tactaatatg attttgattc ttcctcctct ttgctgtcct
5820
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5880
ctcagatgta aaggactttc tctgtacagt atattatcca atgcatgttt gttctctctc
5940
ctgatatatt gaacaccaca cagttgtgaa gccgtgcagt ggggatgccc cacaccccac
6000
agaggcatct accctgtgt ataaggaaag acattttcct ttgctgtact tgcttgagca
6060
gttttattgt ctgtacatgt gagctgtgtg agatagatgt gaaaagttca aatgaatgca
6120
ttttcctgcc ccatgtatac agattgtcat ctgtacaagg aactgtatgt atgaaagcaa
6180
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6240
aaaa
6244
```

```
<210> 5126
```

<210> 117
<212> PRT
<213> Homo sapiens

<400> 5126
```
Met Phe Lys Arg Arg Phe Val Gly Val Arg Pro Ile Cys Phe His Cys
1               5                  10                  15
Thr Phe Ser Gly Leu Val Ser Thr Phe Glu Val Val Leu Trp Leu Asn
            20                  25                  30
Phe Ser Cys Ser Phe Cys Val Val Phe Arg Gly Gly Ser Pro His Ala
            35                  40                  45
Glu Ile Leu Cys Met Gln Pro Thr Gly Lys Arg Pro Pro Gly Ser Gln
        50                  55                  60
Asp Phe Ser Phe Ser Cys Leu Cys Pro Ala Thr Cys Ser Leu Pro Leu
65                  70                  75                  80
Phe Arg Cys Gln Arg Gly Asp Phe Arg Ala Val Cys Phe Asn Pro Gly
                85                  90                  95
Arg Ser Asp Thr Leu Val Ser Phe Phe Gln Glu Thr Ile Ala Phe Thr
            100                 105                 110
Asp Val Leu Val Val
        115
```

<210> 5127
<211> 400
<212> DNA
<213> Homo sapiens

<400> 5127
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ggtaccgcgc caatgcctct cgggaggccc tgcggaccgg ctctggggtg cgttttcccg
60
agttcgtcca gtacctgctg gacgtgcacc ggcccgtggg gatggacatt cactgggacc
120
atgtcagccg gctctgcagc ccctgcctca tcgactacga tttcgtaggc aagttcgaga
180
gcatggagga cgatgccaac ttcttcctga gcctcatccg cgcgccgcgg aacctgacct
240
tcccccggtt caaggaccgg cactcgcagg aggcgcggac cacagcgagg atcgcccacc
300
agtacttcgc ccaactctcg gccctgcaaa ggcagcgcac ctacgacttc tactacatgg
360
attacctgat gttcaactat tccaagccct ttgcagatct
400
```

<210> 5128
<211> 55
<212> PRT
<213> Homo sapiens

<400> 5128
```
Gly Thr Ala Pro Met Pro Leu Gly Arg Pro Cys Gly Pro Ala Leu Gly
1               5                  10                  15
Cys Val Phe Pro Ser Ser Ser Ser Thr Cys Trp Thr Cys Thr Gly Pro
            20                  25                  30
Trp Gly Trp Thr Phe Thr Gly Thr Met Ser Ala Gly Ser Ala Ala Pro
```

```
            35                 40                 45
Ala Ser Ser Thr Thr Ile Ser
    50                 55


<210> 5129
<211> 745
<212> DNA
<213> Homo sapiens


<400> 5129
accggtgaac aggatccccc aggaaatggg gaggaagcct agagagaagg gccagatcgt
60
aggccaagac ccccgcctgt gtctctgttc actggcagcg gagcgaggag agaggtgtgg
120
gctgacctga aaccagcacc tcctgtgtcc ccagctgagc cctgcacggg attggccaaa
180
tgtgctgctc tgcggccgcc ctgctgcccc cccctgggt ggagctgggg tctgggacag
240
tgaagatggc tcccacagct gaggggcact gggtgccaag agcctgccag accctgggcc
300
acccagaaac atgctctgat agtgcagctg tgagcactgg cctgcgtccc ctccacccag
360
ccgacctatg aggctcaggg tgcttggggg cccatcaagg acatagtcct agctgccgac
420
tcatccaggc agcctgcaca acccctggct cccctccacc ggccacctgc ccccctgcac
480
aggcaggatc cggcctcgcc cacccacagg cctgcacctc cgggcccacg gcagcaagat
540
tcctatcttg gggatgcttt cctccctttg ccgagagacc caccccccccc acacccttgcc
600
tctcttcaag gagccgaaaa tgcagctgcc gactgatttg ctgtggagct aaaaataact
660
gccgggctcc agccagggcc caggaaaata tcccattgct aggagacaac cgttgccggg
720
agaccgccat tgctaggcga cgcgt
745


<210> 5130
<211> 111
<212> PRT
<213> Homo sapiens


<400> 5130
Met Ala Val Ser Arg Gln Arg Leu Ser Pro Ser Asn Gly Ile Phe Ser
  1               5                  10                 15
Trp Ala Leu Ala Gly Ala Arg Gln Leu Phe Leu Ala Pro Gln Gln Ile
             20                 25                 30
Ser Arg Gln Leu His Phe Arg Leu Leu Glu Glu Arg Gln Gly Val Gly
         35                 40                 45
Gly Val Gly Leu Ser Ala Lys Gly Gly Lys His Pro Gln Asp Arg Asn
     50                 55                 60
Leu Ala Ala Val Gly Pro Glu Val Gln Ala Cys Gly Trp Ala Arg Pro
65                 70                 75                 80
Asp Pro Ala Cys Ala Gly Gly Gln Val Ala Gly Gly Gly Glu Pro Gly
```

```
                      85                  90                  95
        Val Val Gln Ala Ala Trp Met Ser Arg Gln Leu Gly Leu Cys Pro
                  100                 105                 110
```

<210> 5131
<211> 789
<212> DNA
<213> Homo sapiens

<400> 5131
atgaggaacc tgcagctcag gttcgagaag ggccgcatct acacctacat cggtgaggtg
60
ctggtgtccg tgaaccccta ccaggagctg cccctgtatg ggcctgaggc catcgcccag
120
taccagggcc gtgagctcta tgagcggcca ccccatctct atgctgtggc caacgccgcc
180
tacaaggcaa tgaagcaccg gtccagggac acctgcatcg tcatctcagg ggagagtggg
240
gcagggaaga cagaagccag taagcacatc atgcagtaca tcgctgctgt caccaatcca
300
agccagaggg ctgaggtgga gagggtcaag gacgtgctgc tcaagtccac ctgtgtgctg
360
gaggcctttg gcaatgcccg caccaaccgc aatcacaact ccagccgctt tggcaagtac
420
atggacatca actttgactt caaggggggac ccgatcggag acacatcca cagctaccta
480
ctggagaagt ctcgggtcct caagcagcac gtgggtgaaa gaaacttcca cgccttctac
540
caattgctga gaggcagtga ggacaagcag ctgcatgaac tgcacttgga gagaaaccct
600
gctgtataca atttcacaca ccagggagca ggactcaaca tgactgtgca cagtgccttg
660
gacagtgatg agcagagcca ccaggcagtg accgaggcca tgagggtcat cggcttcagt
720
cctgaagagg tggagtctgt gcatcgcatc ctggctgcca tattgcacct gggaaacatc
780
gagtttgtg
789

<210> 5132
<211> 263
<212> PRT
<213> Homo sapiens

<400> 5132
```
```
        Met Arg Asn Leu Gln Leu Arg Phe Glu Lys Gly Arg Ile Tyr Thr Tyr
        1   5   10   15
        Ile Gly Glu Val Leu Val Ser Val Asn Pro Tyr Gln Glu Leu Pro Leu
                        20   25   30
        Tyr Gly Pro Glu Ala Ile Ala Gln Tyr Gln Gly Arg Glu Leu Tyr Glu
                        35   40   45
        Arg Pro Pro His Leu Tyr Ala Val Ala Asn Ala Ala Tyr Lys Ala Met
                50   55   60
        Lys His Arg Ser Arg Asp Thr Cys Ile Val Ile Ser Gly Glu Ser Gly
```

```
    65                    70                    75                    80
Ala Gly Lys Thr Glu Ala Ser Lys His Ile Met Gln Tyr Ile Ala Ala
                     85                    90                    95
Val Thr Asn Pro Ser Gln Arg Ala Glu Val Glu Arg Val Lys Asp Val
                100                   105                   110
Leu Leu Lys Ser Thr Cys Val Leu Glu Ala Phe Gly Asn Ala Arg Thr
            115                   120                   125
Asn Arg Asn His Asn Ser Ser Arg Phe Gly Lys Tyr Met Asp Ile Asn
        130                   135                   140
Phe Asp Phe Lys Gly Asp Pro Ile Gly Gly His Ile His Ser Tyr Leu
145                   150                   155                   160
Leu Glu Lys Ser Arg Val Leu Lys Gln His Val Gly Glu Arg Asn Phe
                165                   170                   175
His Ala Phe Tyr Gln Leu Leu Arg Gly Ser Glu Asp Lys Gln Leu His
                180                   185                   190
Glu Leu His Leu Glu Arg Asn Pro Ala Val Tyr Asn Phe Thr His Gln
            195                   200                   205
Gly Ala Gly Leu Asn Met Thr Val His Ser Ala Leu Asp Ser Asp Glu
        210                   215                   220
Gln Ser His Gln Ala Val Thr Glu Ala Met Arg Val Ile Gly Phe Ser
225                   230                    235                  240
Pro Glu Glu Val Glu Ser Val His Arg Ile Leu Ala Ala Ile Leu His
                245                   250                   255
Leu Gly Asn Ile Glu Phe Val
                260


<210> 5133
<211> 581
<212> DNA
<213> Homo sapiens

<400> 5133
actatgtctg agtaggcagc cggtaacaca atgtctccct tgtgcaaagt aactctctta
60
gtgagtgctc agatatgtga ggaaaaagta tttggtggag tgtgacaata tgaaccgctt
120
tgaccgacca gacagaaatg ttcggcagcc tcaggaaggt ttttggaaaa ggccacccca
180
gaggtggagt ggacaggagc attaccacct cagccaccct gaccactatc atcaccatgg
240
aaaaagtgac ttgagcagag gctctcccta tagagaatct cctttgggtc attttgaaag
300
ctatggaggg atgccctttt tccaggctca gaagatgttt gttgatgtac cagaaaatac
360
agtgatactg gatgagatga cccttcggca catggttcag gattgcactg ctgtaaaaac
420
tcagttactc aaactgaaac gtctcctgca tcagcatgat ggaagtggtt cattgcatga
480
tattcaactg tcattgccat ccagtccaga accagaagat ggtgataaag tatataagaa
540
tgaagattta ttaaatgaaa taaacaact taaagacgaa a
581


<210> 5134
```

<211> 157
<212> PRT
<213> Homo sapiens

<400> 5134
Met Asn Arg Phe Asp Arg Pro Asp Arg Asn Val Arg Gln Pro Gln Glu
 1   5   10   15
Gly Phe Trp Lys Arg Pro Pro Gln Arg Trp Ser Gly Gln Glu His Tyr
             20   25   30
His Leu Ser His Pro Asp His Tyr His His His Gly Lys Ser Asp Leu
         35   40   45
Ser Arg Gly Ser Pro Tyr Arg Glu Ser Pro Leu Gly His Phe Glu Ser
     50   55   60
Tyr Gly Gly Met Pro Phe Phe Gln Ala Gln Lys Met Phe Val Asp Val
65   70   75   80
Pro Glu Asn Thr Val Ile Leu Asp Glu Met Thr Leu Arg His Met Val
             85   90   95
Gln Asp Cys Thr Ala Val Lys Thr Gln Leu Leu Lys Leu Lys Arg Leu
            100   105   110
Leu His Gln His Asp Gly Ser Gly Ser Leu His Asp Ile Gln Leu Ser
        115   120   125
Leu Pro Ser Ser Pro Glu Pro Glu Asp Gly Asp Lys Val Tyr Lys Asn
    130   135   140
Glu Asp Leu Leu Asn Glu Ile Lys Gln Leu Lys Asp Glu
145   150   155

<210> 5135
<211> 1696
<212> DNA
<213> Homo sapiens

<400> 5135
nnctgcgagc gcctgcccca tgcgccgccg cctctccgca cgatgttccc ctcgcggagg
60
aaagcggcgc agctgccctg ggaggacggc aggtccgggt tgctctccgg cggcctccct
120
cggaagtgtt ccgtcttcca cctgttcgtg gcctgcctct cgctgggctt cttctcccta
180
ctctggctgc agctcagctg ctctggggac gtggcccggg cagtcagggg acaagggcag
240
gagacctcgg gccctccccg cgcctgcccc ccagagccgc ccctgagca ctgggaagaa
300
gacgcatcct ggggccccca ccgcctggca gtgctggtgc ccttccgcga acgcttcgag
360
gagctcctgg tcttcgtgcc ccacatgcgc ngcttcctga gcaggaagaa gatccggcac
420
cacatctacg tgctcaacca ggtggaccac ttcaggttca accgggcagc gctcatcaac
480
gtgggcttcc tggagagcag caacagcacg gactacattg ccatgcacga cgttgacc'.g
540
ctccctctca acgaggagct ggactatggc tttcctgagg ctgggccctt ccacgtggcc
600
tccccggagc tccaccctct ctaccactac aagacctatg tcggcggcat cctgctgctc
660

```
tccaagcagc actaccggct gtgcaatggg atgtccaacc gcttctgggg ctggggccgc
720
gaggacgacg agttctaccg gcgcattaag ggagctgggc tccagctttt ccgcccctcg
780
ggaatcacaa ctgggtacaa gacatttcgc cacctgcacg acccagcctg gcggaagagg
840
gaccagaagc gcatcgcagc tcaaaaacag gagcagttca aggtggacag ggagggaggc
900
ctgaacactg tgaagtacca tgtggcttcc cgcactgccc tgtctgtggg cggggccccc
960
tgcactgtcc tcaacatcat gttggactgt gacaagaccg ccacaccctg gtgcacattc
1020
agctgagctg gatggacagt gaggaagcct gtacctacag gccatattgc tcaggctcag
1080
gacaaggcct caggtcgtgg gcccagctct gacaggatgt ggagtggcca ggaccaagac
1140
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1200
cgtggggtgc ctgggacgct gcttgccatg cacagtgatc agagagaggc tggggtgtgt
1260
cctgtccggg acccccectg ccttcctgct caccctactc tgacctcctt cacgtgccca
1320
ggcctgtggg tagtggggag ggctgaacag gacaacctct catcacccccc acttttgttc
1380
cttcctgctg ggctgcctcg tgcagagaca cagtgtaggg gccatgcagc tggcgtaggt
1440
ggcagttggg cctggtgagg gttaggactt cagaaaccag agcacaagcc ccacagaggg
1500
ggaacagcca gcaccgctct agctggttgt tgccatgccg gaatgtgggc ctagtgttgc
1560
cagatcttct gatttttcga aagaaactag aatgctggat tcttaagtga tatcttctga
1620
tttttaaat gatagcacct aaatgaaact ttcaaaaagt atggcaggcc agacaaaaaa
1680
aaaaaaaaaa aaaaaa
1696
```

```
<210> 5136
<211> 341
<212> PRT
<213> Homo sapiens
```

```
<400> 5136
Xaa Cys Glu Arg Leu Pro His Ala Pro Pro Pro Leu Arg Thr Met Phe
1               5               10              15
Pro Ser Arg Arg Lys Ala Ala Gln Leu Pro Trp Glu Asp Gly Arg Ser
            20              25              30
Gly Leu Leu Ser Gly Gly Leu Pro Arg Lys Cys Ser Val Phe His Leu
        35              40              45
Phe Val Ala Cys Leu Ser Leu Gly Phe Phe Ser Leu Leu Trp Leu Gln
    50              55              60
Leu Ser Cys Ser Gly Asp Val Ala Arg Ala Val Arg Gly Gln Gly Gln
65              70              75              80
Glu Thr Ser Gly Pro Pro Arg Ala Cys Pro Pro Glu Pro Pro Pro Glu
```

4316

```
                         85                    90                    95
His Trp Glu Glu Asp Ala Ser Trp Gly Pro His Arg Leu Ala Val Leu
                        100                   105                   110
Val Pro Phe Arg Glu Arg Phe Glu Glu Leu Leu Val Phe Val Pro His
                115                   120                   125
Met Arg Arg Phe Leu Ser Arg Lys Lys Ile Arg His His Ile Tyr Val
        130                   135                   140
Leu Asn Gln Val Asp His Phe Arg Phe Asn Arg Ala Ala Leu Ile Asn
145                   150                   155                   160
Val Gly Phe Leu Glu Ser Ser Asn Ser Thr Asp Tyr Ile Ala Met His
                165                   170                   175
Asp Val Asp Leu Leu Pro Leu Asn Glu Glu Leu Asp Tyr Gly Phe Pro
                180                   185                   190
Glu Ala Gly Pro Phe His Val Ala Ser Pro Glu Leu His Pro Leu Tyr
        195                   200                   205
His Tyr Lys Thr Tyr Val Gly Gly Ile Leu Leu Leu Ser Lys Gln His
        210                   215                   220
Tyr Arg Leu Cys Asn Gly Met Ser Asn Arg Phe Trp Gly Trp Gly Arg
225                   230                   235                   240
Glu Asp Asp Glu Phe Tyr Arg Arg Ile Lys Gly Ala Gly Leu Gln Leu
                245                   250                   255
Phe Arg Pro Ser Gly Ile Thr Thr Gly Tyr Lys Thr Phe Arg His Leu
                260                   265                   270
His Asp Pro Ala Trp Arg Lys Arg Asp Gln Lys Arg Ile Ala Ala Gln
        275                   280                   285
Lys Gln Glu Gln Phe Lys Val Asp Arg Glu Gly Gly Leu Asn Thr Val
        290                   295                   300
Lys Tyr His Val Ala Ser Arg Thr Ala Leu Ser Val Gly Gly Ala Pro
305                   310                   315                   320
Cys Thr Val Leu Asn Ile Met Leu Asp Cys Asp Lys Thr Ala Thr Pro
                325                   330                   335
Trp Cys Thr Phe Ser
                340
```

```
<210> 5137
<211> 3090
<212> DNA
<213> Homo sapiens

<400> 5137
nngcggcgca atccggagag gacgccagga cgacgcccga gttccctttc aggctagaac
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tcttcctttt tctagcttgg ggtagaaggc ggcgggangc cccggaaccc ccgccctcgg
120
ggtgcgaggc ggcanagggc cgtcccctac atttgcatag cccctgggac gtggcgctgc
180
acccaagcct cttctcagtt ggagggaact ccaagtccca cagtgccacg gggtggggtg
240
cgtcactttc gctgcgttgg aggctgagga gaattgagcc tgggaggcgg gtccggagag
300
ggctatggaa agccgccggc ggggaatccc ggccgtagag ggacagtgga taggtgcccg
360
aggcctacag ctggcctggg gctcgtgtct gggcttcgga cgttggggcc cggtggccca
420
```

4317

```
ccctttccgt agttgtccca aatggagctg gaattggatg ctggtgacca agacctgctg
480
gccttcctgc tagaggaaag tggagatttg gggacggcac ccgatgaggc cgtgagggcc
540
ccactggact gggcgctgcc gctttctgag gtaccgagcg actgggaagt agatgatttg
600
ctgtgctccc tgctgagtcc cccagcgtcg ttgaacattc tcagctcctc caacccctgc
660
cttgtccacc atgaccacac ctactccctc ccacgggaaa ctgtctctat ggatctagag
720
agtgagagct gtagaaaaga ggggacccag atgactccac agcatatgga ggagctggca
780
gagcaggaga ttgctaggct agtactgaca gatgaggaga agagtctatt ggagaaggag
840
gggcttattc tgcctgagac acttcctctc actaagacag aggaacaaat tctgaaacgt
900
gtgcggagga agattcgaaa taaaagatct gctcaagaga ccgcaggaa aaagaaggtg
960
tatgttgggg gtttagagag cagggtcttg aaatacacag cccagaatat ggagcttcag
1020
aacaaagtac agcttctgga ggaacagaat ttgtcccttc tagatcaact gaggaaactc
1080
caggccatgg tgattgagat atcaaacaaa accagcagca gcagcacctg catcttggtc
1140
ctactagtct ccttctgcct cctccttgta cctgctatgt actcctctga cacaaggggg
1200
agcctgccag ctgagcatgg agtgttgtcc cgccagcttc gtgccctccc cagtgaggac
1260
ccttaccagc tggagctgcc tgccctgcag tcagaagtgc cgaaagacag cacacaccag
1320
tggttggacg gctcagactg tgtactccag gcccctggca cacttcctg cctgctgcat
1380
tacatgcctc aggctcccag tgcagagcct cccctggagt ggccattccc tgacctcttc
1440
tcagagcctc tctgccgagg tcccatcctc cccctgcagg caaatctcac aaggaaggga
1500
ggatggcttc ctactggtag cccctctgtc attttgcagg acagatactc aggctagata
1560
tgaggatatg tgggggtct cagcaggagc ctggggggct ccccatctgt gtccaaataa
1620
aaagcggtgg gcaagggctg ccgcagctc ctgtgccctg tcaggacgac tgagggctca
1680
aacacaccac acttaatggc tttctgggtc ttttatttgt acccatgtgt ctgtcacacc
1740
atgaatgtac ctggggaaat caactgacct ccctgaacat ttcacgcagt cagggaacag
1800
gtgaggaaag aaataaataa gtgattctaa tgctgcctag gtcaccctca accccattt
1860
actggcacaa ttgggtggag agaagggaag gggtatgatt gtcctgatgg ctcagggttg
1920
caggaggttc agaggggaag gaggaaaggc caggctggag ctgggctgt tagcacttcc
1980
ctcccacagt tcagacggct cactctgggc tcaggtttgc catggcttcc tttggtccaa
2040
```

```
acataggccc tgtccttagt cctgtgccct gtttgacttt tggccaggag gcctttttgt
2100
gctgctgctg ttgcagggct agctgcatgg cccatatgct cagtggccgc atgtaggcca
2160
gtgagcggaa cactcgctgc tggcagtatg cctctggggt ctggaaggcc agacccaggc
2220
gctcccacac ggtacggtag cagccttcag ctgtctggaa gccctcccaa gtcaggccct
2280
cttggatcat ggtagctgcc agcccgtaga ccacacccac ccagacttca tcagactgca
2340
cactggattt atcagggaca ccatggggct gcatcccatt cacagccccc atggcccctc
2400
ctgcaaaggc ctggacgttc agctcaaaga tagtttggag agcacggacc acatgttggg
2460
taggaaacac ctcagtgtct ccttctccta ggccacaggc cttcaggaac cactgtccag
2520
cacactggtc agacataaca ctacgagact gaggccgaga gctgctgtca tagttgtaat
2580
agcggccatt ccacagcagt ctctcatagg cttcttggcc ccggctgagg atagaagaaa
2640
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2700
ctgccagcca cagccctcca cagtaagcac tggggcctgt ggtcacccat ccatcatagg
2760
tctggtctgc atagcctcca ttttcaatga gtccatcatg gtccttgtca aacttcattt
2820
cagattccat cacagcctgc agcacaaact tcaggttcag gtccttccaa tcagcagtat
2880
catggattaa atatgcattg acgcggagcc atggttcatc atctgtggga gaggagggga
2940
cttgggtcac ttgcattggt ggatagggta gagggtgcaa aagttgaggg agggaagctg
3000
accttggggt ggacttttac ctgggttccc aatatcatgg gggatgacgt tcctcctttt
3060
cacaggtgcc atcaccccac tcatcangta
3090
```

```
<210> 5138
<211> 371
<212> PRT
<213> Homo sapiens
```

```
<400> 5138
Met Glu Leu Glu Leu Asp Ala Gly Asp Gln Asp Leu Leu Ala Phe Leu
1               5                   10                  15
Leu Glu Glu Ser Gly Asp Leu Gly Thr Ala Pro Asp Glu Ala Val Arg
                20                  25                  30
Ala Pro Leu Asp Trp Ala Leu Pro Leu Ser Glu Val Pro Ser Asp Trp
            35                  40                  45
Glu Val Asp Asp Leu Leu Cys Ser Leu Leu Ser Pro Pro Ala Ser Leu
        50                  55                  60
Asn Ile Leu Ser Ser Ser Asn Pro Cys Leu Val His His Asp His Thr
65                  70                  75                  80
Tyr Ser Leu Pro Arg Glu Thr Val Ser Met Asp Leu Glu Ser Glu Ser
```

```
                          85                        90                        95
     Cys Arg Lys Glu Gly Thr Gln Met Thr Pro Gln His Met Glu Glu Leu
                 100                       105                       110
     Ala Glu Gln Glu Ile Ala Arg Leu Val Leu Thr Asp Glu Glu Lys Ser
                 115                       120                       125
     Leu Leu Glu Lys Glu Gly Leu Ile Leu Pro Glu Thr Leu Pro Leu Thr
                 130                       135                       140
     Lys Thr Glu Glu Gln Ile Leu Lys Arg Val Arg Arg Lys Ile Arg Asn
     145                       150                       155                       160
     Lys Arg Ser Ala Gln Glu Ser Arg Arg Lys Lys Lys Val Tyr Val Gly
                           165                       170                       175
     Gly Leu Glu Ser Arg Val Leu Lys Tyr Thr Ala Gln Asn Met Glu Leu
                 180                       185                       190
     Gln Asn Lys Val Gln Leu Leu Glu Glu Gln Asn Leu Ser Leu Leu Asp
                 195                       200                       205
     Gln Leu Arg Lys Leu Gln Ala Met Val Ile Glu Ile Ser Asn Lys Thr
                 210                       215                       220
     Ser Ser Ser Ser Thr Cys Ile Leu Val Leu Leu Val Ser Phe Cys Leu
     225                       230                       235                       240
     Leu Leu Val Pro Ala Met Tyr Ser Ser Asp Thr Arg Gly Ser Leu Pro
                           245                       250                       255
     Ala Glu His Gly Val Leu Ser Arg Gln Leu Arg Ala Leu Pro Ser Glu
                 260                       265                       270
     Asp Pro Tyr Gln Leu Glu Leu Pro Ala Leu Gln Ser Glu Val Pro Lys
                 275                       280                       285
     Asp Ser Thr His Gln Trp Leu Asp Gly Ser Asp Cys Val Leu Gln Ala
                 290                       295                       300
     Pro Gly Asn Thr Ser Cys Leu Leu His Tyr Met Pro Gln Ala Pro Ser
     305                       310                       315                       320
     Ala Glu Pro Pro Leu Glu Trp Pro Phe Pro Asp Leu Phe Ser Glu Pro
                           325                       330                       335
     Leu Cys Arg Gly Pro Ile Leu Pro Leu Gln Ala Asn Leu Thr Arg Lys
                 340                       345                       350
     Gly Gly Trp Leu Pro Thr Gly Ser Pro Ser Val Ile Leu Gln Asp Arg
                 355                       360                       365
     Tyr Ser Gly
         370
```

<210> 5139
<211> 1968
<212> DNA
<213> Homo sapiens

<400> 5139
gtctgccggc ttctggttcc cacgcaagta agcctgctgt caatggagga ggacattgat
60
acccgcaaaa tcaacaacag tttcctgcgc gaccacagct atgcgaccga agctgacatt
120
atctctacgg tagaattcaa ccacacggga gaattactag cgacagggga caaggggggt
180
cgggttgtaa tatttcaacg agagcaggag agtaaaaatc aggttcatcg tagggtgaa
240
tacaatgttt acagcacatt ccagagccat gaacccgagt tcgattacct gaagagttta
300

4320

```
gaaatagaag aaaaaatcaa taaaataaga tggctcccc agcagaatgc agcttacttt
360
cttctgtcta ctaatgataa aactgtgaag ctgtggaaag tcagcgagcg tgataagagg
420
ccagaaggct acaatctgaa agatgaggag ggccggctcc gggatcctgc caccatcaca
480
accctgcggg tgcctgtcct gagacccatg gacctgatgg tggaggccac cccacgaaga
540
gtatttgcca acgcacacac atatcacatc aactccatat ctgtcaacag cgactatgaa
600
acctacatgt ccgctgatga cctgaggatt aacctatgga actttgaaat aaccaatcaa
660
agttttaata ttgtggacat taagccagcc aacatggagg agctcacgga ggtgatcaca
720
gcagccgagt tccacccca tcattgcaac accttcgtgt acagcagcag caaagggaca
780
atccggctgt gtgacatgcg ggcatctgcc ctgtgtgaca ggcacaccaa gtttttgaa
840
gagccggaag atccaagcaa cagatcattt ttctctgaaa ttatctcttc gatttcggat
900
gtgaagttca gccacagtgg gaggtatatc atgaccagag actacttgac cgtcaaagtc
960
tgggatctca acatggagag caggccggtg gagacccacc aggttcatga ctacctgcgc
1020
agcaagctct gctctctcta tgagaacgac tgcatctttg acaagtttga gtgtgtgtgg
1080
aatgggtcag acagtgtcat catgacaggc tcctataaca acttcttcag gatgtttgat
1140
agagacacca agcgtgatgt gacccttgag gcttcgaggg aaaacagcaa gccccgggct
1200
atcctcaaac cccgaaaagt gtgtgtgggg ggcaagcgga gaaaagacga gatcagtgtc
1260
gacagtctgg actttagcaa aaagatcctg cacacagcct ggcaccccgt ggacaatgtc
1320
attgccgtgg ctgccaccaa taacttgtac atattccagg acaaaatcaa ctagagacgc
1380
gaacgtgagg accaagtctt gtcttgcata gttaagccgg acatttttct gtcagagaaa
1440
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1500
caggagaaag ccgcctccgc tggaggcccg gtgtggttcc gcctcggcga ggcgcgagac
1560
aggcgctgct gctcacgtgg agacgctctc gaagcagagt tgacggacac tgctcccaaa
1620
aggtcattac tcagaataaa tgtatttatt tcagtccgag ccttcctttc caatttatag
1680
accaaaaaat taacatccaa gagaaaagtt attgtcagat accgctcttt ctccaacttt
1740
ccctcttct ctgccatcac acttgggcct tcactgcagc gtggtgtggc caccgtccgt
1800
gtcctctcgg ccttcctccg agtccaggtg gactctgtgg atgtgtggat gtggcccgag
1860
caggctcagg cggccccact cacccacagc atccgccgcc acccttcgg gtgtgagcgc
1920
```

tcaataaaaa caacacacta taaagtgttt ttaaatccaa aaaaaaaa
1968

<210> 5140
<211> 443
<212> PRT
<213> Homo sapiens

<400> 5140
```
Met Glu Glu Asp Ile Asp Thr Arg Lys Ile Asn Asn Ser Phe Leu Arg
1               5                   10                  15
Asp His Ser Tyr Ala Thr Glu Ala Asp Ile Ile Ser Thr Val Glu Phe
            20                  25                  30
Asn His Thr Gly Glu Leu Leu Ala Thr Gly Asp Lys Gly Gly Arg Val
            35                  40                  45
Val Ile Phe Gln Arg Glu Gln Glu Ser Lys Asn Gln Val His Arg Arg
        50                  55                  60
Gly Glu Tyr Asn Val Tyr Ser Thr Phe Gln Ser His Glu Pro Glu Phe
65                  70                  75                  80
Asp Tyr Leu Lys Ser Leu Glu Ile Glu Glu Lys Ile Asn Lys Ile Arg
                85                  90                  95
Trp Leu Pro Gln Gln Asn Ala Ala Tyr Phe Leu Leu Ser Thr Asn Asp
            100                 105                 110
Lys Thr Val Lys Leu Trp Lys Val Ser Glu Arg Asp Lys Arg Pro Glu
            115                 120                 125
Gly Tyr Asn Leu Lys Asp Glu Glu Gly Arg Leu Arg Asp Pro Ala Thr
            130                 135                 140
Ile Thr Thr Leu Arg Val Pro Val Leu Arg Pro Met Asp Leu Met Val
145                 150                 155                 160
Glu Ala Thr Pro Arg Arg Val Phe Ala Asn Ala His Thr Tyr His Ile
                165                 170                 175
Asn Ser Ile Ser Val Asn Ser Asp Tyr Glu Thr Tyr Met Ser Ala Asp
                180                 185                 190
Asp Leu Arg Ile Asn Leu Trp Asn Phe Glu Ile Thr Asn Gln Ser Phe
            195                 200                 205
Asn Ile Val Asp Ile Lys Pro Ala Asn Met Glu Glu Leu Thr Glu Val
    210                 215                 220
Ile Thr Ala Ala Glu Phe His Pro His His Cys Asn Thr Phe Val Tyr
225                 230                 235                 240
Ser Ser Ser Lys Gly Thr Ile Arg Leu Cys Asp Met Arg Ala Ser Ala
                245                 250                 255
Leu Cys Asp Arg His Thr Lys Phe Phe Glu Glu Pro Glu Asp Pro Ser
                260                 265                 270
Asn Arg Ser Phe Phe Ser Glu Ile Ile Ser Ser Ile Ser Asp Val Lys
            275                 280                 285
Phe Ser His Ser Gly Arg Tyr Ile Met Thr Arg Asp Tyr Leu Thr Val
            290                 295                 300
Lys Val Trp Asp Leu Asn Met Glu Ser Arg Pro Val Glu Thr His Gln
305                 310                 315                 320
Val His Asp Tyr Leu Arg Ser Lys Leu Cys Ser Leu Tyr Glu Asn Asp
                325                 330                 335
Cys Ile Phe Asp Lys Phe Glu Cys Val Trp Asn Gly Ser Asp Ser Val
                340                 345                 350
Ile Met Thr Gly Ser Tyr Asn Asn Phe Phe Arg Met Phe Asp Arg Asp
```

```
           355                      360                      365
Thr Lys Arg Asp Val Thr Leu Glu Ala Ser Arg Glu Asn Ser Lys Pro
    370                      375                      380
Arg Ala Ile Leu Lys Pro Arg Lys Val Cys Val Gly Gly Lys Arg Arg
385                      390                      395                  400
Lys Asp Glu Ile Ser Val Asp Ser Leu Asp Phe Ser Lys Lys Ile Leu
                405                      410                      415
His Thr Ala Trp His Pro Val Asp Asn Val Ile Ala Val Ala Ala Thr
                420                      425                      430
Asn Asn Leu Tyr Ile Phe Gln Asp Lys Ile Asn
            435                      440
```

<210> 5141
<211> 928
<212> DNA
<213> Homo sapiens

<400> 5141

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ngcgcgccgg ccggatagcg agccgcgctg gcggcggcgg tggccgcgat gatggagatc
60
cagatggacg agggcggcgg cgtggtggtg taccaggacg actactgctc cggctcggtg
120
atgtcggagc gggtgtcggg cctggcgggc tccatctacc gcgagttcga gcgcctcatc
180
cactgctacg acgaggaggt ggtcaaggag ctcatgccgc tggtggtgaa cgtgctggag
240
aacctagact cggtgctcag cgagaaccag gagcacgagg tggagctgga gctgctgcgc
300
gaggacaacg agcagctgct cacccagtac gagcgtgaga aggcgctgcg caggcaggcg
360
gaggagaaat tcattgagtt tgaagatgct ctggaacaag agaagaaaga gctgcaaatc
420
caggtggagc actacgagtt ccagacgcgc cagctggagc tgaaggccaa gaactatgcc
480
gatcagattt cccggttgga ggagcgggag tcggagatga agaaggagta caatgccctg
540
caccagcggc acacagagat gatacagacc tacgtggagc acattgagag gtccaagatg
600
cagcaggtcg gaggaaacag ccagaccgag agcagcctgc cggggcggag caggaaggag
660
cgccccacct ccctgaacgt gttccccctg gctgacggca cggtacgtgc acagatcggg
720
ggcaagctcg tgcctgcggg ggaccactgg cacctgagtg acctcggcca gctgcagtcc
780
agctccagct accaggtttt gtagccgtgr cgtggagtga gaggttcctc ccctgttgct
840
ggtgttcccc gtttcactgg ggcgggagct cgtctgcag gcagcccttc acgactctct
900
gggccactcg ccctctccct tcacgcgt
928
```

<210> 5142
<211> 227
<212> PRT

<213> Homo sapiens

<400> 5142

Met	Ser	Glu	Arg	Val	Ser	Gly	Leu	Ala	Gly	Ser	Ile	Tyr	Arg	Glu	Phe
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Glu	Arg	Leu	Ile	His	Cys	Tyr	Asp	Glu	Glu	Val	Val	Lys	Glu	Leu	Met
			20					25					30		
Pro	Leu	Val	Val	Asn	Val	Leu	Glu	Asn	Leu	Asp	Ser	Val	Leu	Ser	Glu
		35					40					45			
Asn	Gln	Glu	His	Glu	Val	Glu	Leu	Glu	Leu	Leu	Arg	Glu	Asp	Asn	Glu
	50					55					60				
Gln	Leu	Leu	Thr	Gln	Tyr	Glu	Arg	Glu	Lys	Ala	Leu	Arg	Arg	Gln	Ala
65					70					75					80
Glu	Glu	Lys	Phe	Ile	Glu	Phe	Glu	Asp	Ala	Leu	Glu	Gln	Glu	Lys	Lys
				85					90					95	
Glu	Leu	Gln	Ile	Gln	Val	Glu	His	Tyr	Glu	Phe	Gln	Thr	Arg	Gln	Leu
			100					105					110		
Glu	Leu	Lys	Ala	Lys	Asn	Tyr	Ala	Asp	Gln	Ile	Ser	Arg	Leu	Glu	Glu
			115					120					125		
Arg	Glu	Ser	Glu	Met	Lys	Lys	Glu	Tyr	Asn	Ala	Leu	His	Gln	Arg	His
		130					135					140			
Thr	Glu	Met	Ile	Gln	Thr	Tyr	Val	Glu	His	Ile	Glu	Arg	Ser	Lys	Met
145					150					155					160
Gln	Gln	Val	Gly	Gly	Asn	Ser	Gln	Thr	Glu	Ser	Ser	Leu	Pro	Gly	Arg
				165					170					175	
Ser	Arg	Lys	Glu	Arg	Pro	Thr	Ser	Leu	Asn	Val	Phe	Pro	Leu	Ala	Asp
			180					185					190		
Gly	Thr	Val	Arg	Ala	Gln	Ile	Gly	Gly	Lys	Leu	Val	Pro	Ala	Gly	Asp
			195					200					205		
His	Trp	His	Leu	Ser	Asp	Leu	Gly	Gln	Leu	Gln	Ser	Ser	Ser	Ser	Tyr
	210					215					220				
Gln	Val	Leu													
225															

<210> 5143
<211> 1666
<212> DNA
<213> Homo sapiens

<400> 5143

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ncccgcccac agttccgacg aaaaatggcg gggtttcctg agttggtggt ccttgaccct
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ccatgggaca aggagctcgc ggctggcaca gagagccagg ccttggtctc cgccactccc
120
cgagaagact ttcgggtgcg ctgcacctcg aagcgggctg tgaccgaaat gctacaactg
180
tgcggccgct tcgtgcaaaa gctcggggac gctctgccgg aggagattcg ggagcccgct
240
ctgcgagatg cgcagtggac ttttgaatca gctgtgcaag agaatatcag cattaatggg
300
caagcatggc aggaagcttc agataattgt tttatggatt ctgacatcaa agtacttgaa
360
gatcagtttg atgaaatcat agtagatata gccacaaaac gtaagcagta tcccagaaag
420
```

atcctggaat gtgtcatcaa aaccataaaa gcaaaacaag aaattctgaa gcagtaccac
480
cctgttgtac atccactgga cctaaaatat gaccctgatc cagcccctca tatggaaaat
540
ttgaaatgca gaggggaaac agtagcaaag gagatcagtg aagccatgaa gtccttgcct
600
gcattaattg aacaaggaga gggatttttcc caagttctca ggatgcagcc tgttatccac
660
ctccagagga ttcaccaaga agtctttttcc agttgtcata ggaaaccaga tgctaaacct
720
gagaacttta taacacagat agaaaccaca ccaacagaga ctgcttccag gaaaaccctct
780
gacatggtac tgaaaagaaa gcaaactaaa gactgccccc agagaaaatg gtatccattg
840
cggccaaaga aaattaatct tgatacatga gctcttttctg tttattttgg gagttgaaaa
900
taggcaccat caacatttag attacagcct aattaatacc tagataagac ttcatttgaa
960
ataagaaata actctttttac tagtgattca tttatacaga tatagtatct ctgtgcgggg
1020
atatgatata atattgtatt tccttactgt tttatctatt gtaaataaaa agcatttttaa
1080
aaagtattga cacaaagccc atcagtgggc attaaaaata ttaaaagtgc agacttttac
1140
tgtccttaag tgccatcaac tctcagctcc cttgtagctt ttgtgggatt taacaagtaa
1200
caaattctgt tgtgtttccc tggtatacat ctttctagga aaaaaaaaa aagagagaga
1260
gctgtataat gattttcgt ttacatgctg aaaagtaatt atcagttctg cacagcagca
1320
gatgcagggt ttttttttaa agatgtagtt tgatttatca aattaatgtg ctgatgataa
1380
tactggcttt gactttgtta ctccatgttc agctaattta ggtttgtgag attaacttta
1440
ggattttttg ttgtgtaaga caatgataac tattatttgt gcaacattac tctttgaaat
1500
aaaaattggc atgtagccaa tgtttcctgc ccacactcac ttttttctat agaccattaa
1560
cataatttga cttggaacta atggtttctt tttagggttt cttatttatt tctttacaaa
1620
tcattccagt tcaaaatata tatcagatta atacactgaa aaaaaa
1666

<210> 5144
<211> 218
<212> PRT
<213> Homo sapiens

<400> 5144
Leu Pro Glu Glu Ile Arg Glu Pro Ala Leu Arg Asp Ala Gln Trp Thr
1   5   10   15
Phe Glu Ser Ala Val Gln Glu Asn Ile Ser Ile Asn Gly Gln Ala Trp
                20   25   30
Gln Glu Ala Ser Asp Asn Cys Phe Met Asp Ser Asp Ile Lys Val Leu

4325

```
          35                    40                    45
Glu Asp Gln Phe Asp Glu Ile Ile Val Asp Ile Ala Thr Lys Arg Lys
     50                    55                    60
Gln Tyr Pro Arg Lys Ile Leu Glu Cys Val Ile Lys Thr Ile Lys Ala
65                    70                    75                    80
Lys Gln Glu Ile Leu Lys Gln Tyr His Pro Val Val His Pro Leu Asp
               85                    90                    95
Leu Lys Tyr Asp Pro Asp Pro Ala Pro His Met Glu Asn Leu Lys Cys
          100                   105                   110
Arg Gly Glu Thr Val Ala Lys Glu Ile Ser Glu Ala Met Lys Ser Leu
          115                   120                   125
Pro Ala Leu Ile Glu Gln Gly Glu Gly Phe Ser Gln Val Leu Arg Met
     130                   135                   140
Gln Pro Val Ile His Leu Gln Arg Ile His Gln Glu Val Phe Ser Ser
145                   150                   155                   160
Cys His Arg Lys Pro Asp Ala Lys Pro Glu Asn Phe Ile Thr Gln Ile
               165                   170                   175
Glu Thr Thr Pro Thr Glu Thr Ala Ser Arg Lys Thr Ser Asp Met Val
               180                   185                   190
Leu Lys Arg Lys Gln Thr Lys Asp Cys Pro Gln Arg Lys Trp Tyr Pro
     195                   200                   205
Leu Arg Pro Lys Lys Ile Asn Leu Asp Thr
     210                   215
```

<210> 5145
<211> 1885
<212> DNA
<213> Homo sapiens

<400> 5145
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ncctaggcgt cctgacaggt ggatttcgac aaggtcattg tgccctgcca aggcacagcg
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tagatctgga aagagcagaa tgctttcctt ttcagatgtg gctggtcatg gaagggggcag
120
ttgtccaagt tgggctgggt cttggtacac gtggttcggc ccagctccac gtccaagaag
180
tagttcaccc cagctacgat ctgcttgcgg gcgcgcacca cctgcagcgc gcggctgtgg
240
tacatgtcgt tgctggcttt gttgtactcg ccgacggcct cgcctcggta tcgcagcggg
300
tcctctctat ctagctccag cctctcgcct gcgccccact ccccgcgtcc cgcgtcctag
360
ccgaccatgg ccgggcccct gcgcgccccg ctgctcctgc tggccatcct ggccgtggcc
420
ctggccgtga gccccgcggc cggctccagt cccggcaagc cgccgcgcct ggtgggaggc
480
cccatggacg ccagcgtgga ggaggagggt gtgcggcgtg cactggactt tgccgtcggc
540
gagtacaaca aagccggcaa cgacatgtac cacagccgcg cgctgcaggt ggtgcgcgcc
600
cgcaagcagg tgacaatgtg ggcagctcat gaagatcgta gctggggtga actacttctt
660
ggacgtggag ctgggccgaa ccacgtgtac caagacccag cccaacttgg acaactgccc
720
```

cttccatgac cagccacatc tgaaaaggaa agcattctgc tctttccaga tctacgctgt
780
gccttggcag ggcacaatga ccttgtcgaa atccacctgt caggacgcct aggggtctgt
840
accgggctgg cctgtgccta tcacctctta tgcacacctc ccaccccctg tattcccacc
900
cctggactgg tggcccctgc cttggggaag gtctccccat gtgcctgcac caggagacag
960
acagagaagg cagcaggcgg cctttgttgc tcagcaaggg gctctgccct ccctccttcc
1020
ttcttgcttc tcatagcccc ggtgtgcggt gcatacaccc ccacctcctg caataaaata
1080
gtagcatcgg caaaaaaacc tggcatccgg acaggcatcc aaggccttaa aggagaccag
1140
ggggaacctg ggccctctgg aaaccccggc aaggtgggct acccagggcc cagcggcccc
1200
ctcggagccc gtggcatccc gggaattaaa ggcaccaagg gcagcccagg aaacatcaag
1260
gaccagccga ggccagcctt ctccgccatt cggcggaacc ccccaatggg gggcaacgtg
1320
gtcatcttcg acacggtcat caccaaccag gaagaaccgt accagaacca ctccggccga
1380
ttcgtctgca ctgtacccgg ctactactac ttcaccttcc aggtgctgtc ccagtgggaa
1440
atctgcctgt ccatcgtctc ctcctcaagg ggccaggtcc gacgctccct gggcttctgt
1500
gacaccacca acaagggct cttccaggtg gtgtcagggg gcatggtgct tcagctgcag
1560
cagggtgacc aggtctgggt tgaaaaagac cccaaaaagg gtcacattta ccagggctct
1620
gaggccgaca gcgtcttcag cggcttcctc atcttcccat ctgcctgagc cagggaagga
1680
cccctcccc cacccacctc tctggcttcc atgctccgcc tgtaaaatgg gggcgctatt
1740
gcttcagctg ctgaagggag ggggctggct ctgagagccc caggactggc tgccccgtga
1800
cacatgctct aagaagctcg tttcttagac ctcttcctgg aataaacatc tgtgtctgtg
1860
tctgctgaaa aaaaaaaaa aaaaa
1885

<210> 5146
<211> 312
<212> PRT
<213> Homo sapiens

<400> 5146
Pro Ala Thr Ser Glu Lys Glu Ser Ile Leu Leu Phe Pro Asp Leu Arg
1   5   10   15
Cys Ala Leu Ala Gly His Asn Asp Leu Val Glu Ile His Leu Ser Gly
            20   25   30
Arg Leu Gly Val Cys Thr Gly Leu Ala Cys Ala Tyr His Leu Leu Cys
        35   40   45
Thr Pro Pro Thr Pro Cys Ile Pro Thr Pro Gly Leu Val Ala Pro Ala

4327

```
         50                    55                    60
Leu Gly Lys Val Ser Pro Cys Ala Cys Thr Arg Arg Gln Thr Glu Lys
65                    70                    75                    80
Ala Ala Gly Gly Leu Cys Cys Ser Ala Arg Gly Ser Ala Leu Pro Pro
                      85                    90                    95
Ser Phe Leu Leu Leu Ile Ala Pro Val Cys Gly Ala Tyr Thr Pro Thr
              100                   105                   110
Ser Cys Asn Lys Ile Val Ala Ser Ala Lys Lys Pro Gly Ile Arg Thr
          115                   120                   125
Gly Ile Gln Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly
      130                   135                   140
Asn Pro Gly Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala
145                   150                   155                   160
Arg Gly Ile Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile
              165                   170                   175
Lys Asp Gln Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro
          180                   185                   190
Met Gly Gly Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu
          195                   200                   205
Glu Pro Tyr Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly
      210                   215                   220
Tyr Tyr Tyr Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu
225                   230                   235                   240
Ser Ile Val Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe
              245                   250                   255
Cys Asp Thr Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met
          260                   265                   270
Val Leu Gln Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro
          275                   280                   285
Lys Lys Gly His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser
      290                   295                   300
Gly Phe Leu Ile Phe Pro Ser Ala
305                   310
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<210> 5147
<211> 2943
<212> DNA
<213> Homo sapiens

<400> 5147
nacgcgtcgc tgaaggagcg cttcgccttc ctcttcaact cggagctgct gagcgatgtg
60
cgcttcgtac tgggcaaggg tcgcggcgcc gccgccgctg ggggcccgca gcgcatcccc
120
gcccaccgct tcgtgctggc ggccggcagc gccgtctttg acgccatgtt caacggcggc
180
atggccacca cgtcggccga gatcgagctg ccggacgtgg agcccgcagc cttcctggcg
240
ctgctgagat ttctatattc agatgaagtt caaattggtc cagaaacagt tatgaccact
300
ctttatactg ccaagaaata cgcagtccca gccttggaag cacactgtgt agaatttctc
360
accaaacatc ttagggcaga taatgccttt atgttactta ctcaggctcg attatttgat
420

gaacctcagc ttgctagtct ttgtctagat acaatagaca aaagcacaat ggatgcaata
480
agtgcagaag ggtttactga tattgatata gatacactct gtgcagtttt agagagagac
540
acactcagta ttcgagaaag tcgacttttt ggagctgttg tacgctgggc agaagcagaa
600
tgtcagagac aacaattacc tgtgactttt gggaataaac aaaaagttct aggaaaagca
660
ctttccttaa tccggttccc actgatgaca attgaggaat ttgcagcagg tcctgctcaa
720
tctggaattt tgtcagatcg tgaagtggta aacctctttc ttcattttac tgtcaacccct
780
aaaccccgag ttgaatacat tgaccgacca agatgctgtc tcaggggaaa ggaatgctgc
840
atcaatagat tccagcaagt agaaagccgc tggggttaca gtgggacgag tgatcgaatc
900
agattcacag ttaatagaag gatctctata gttggatttg cttgtatgg atctattcat
960
ggccctacag attatcaagt gaatatacag atcattgaat atgagaaaaa gcaaaccctg
1020
ggacagaatg ataccggctt tagttgtgat gggacagcta acacattcag ggtcatgttc
1080
aaggaaccca tagagatcct gcccaatgtg tgctacacag catgtgcaac actcaaaggt
1140
ccagattccc actatggcac aaaaggattg aagaaagtag tgcatgagac acctgctgca
1200
agcaagactg ttttttttctt ttttagttcc cctggcaata ataatggcac ttcaatagaa
1260
gatggacaaa ttccagaaat catattttat acataattta gcattataat acatcttggc
1320
taaataatac catacaatct agtgtcaaaa acataaatgg ccacaaaaaa gtagtttgag
1380
tgttatgaat atttaaaatt gtaagataag aaacagtttc ttagagcaga tagaaaaatg
1440
cttatttaaa tctttgcatg atttaaaaac agattttcca ttttcttaca actttaagag
1500
aaaagaactg ggtttaatgg tttaaaaaaa agcacagctt tttcaccttc atcttgtata
1560
atttcataga ttggctgact tagggtcttt caatagtttg ggaattgaaa gattcttgtt
1620
atatatagct agtttgggtt tgtttttgtt ttaactattt tgaaggttag gtgagatggg
1680
caaataggct taactatttt gaaggttgga tgaaaagaga tgggtcagta ttcctacaga
1740
attcttatta actcaaataa ctaaatttca gaaattaag aagctgactt tatatttggt
1800
ggtttgaagt atcttgttgt tagcatttgt aataatgcta aaaaggcct aataaaatgc
1860
ccaagaaaat attcagtgca tttatagaga aggatatttt gtagtagtat agtaatgtgt
1920
tatgtagtac agttttaaag ctataaatgg aattttgtgt aaattcacaa aaatgtgata
1980
taaacaggat ctaagactgg attccctgtc actaaactgc accactatac ctgtctctct
2040

4329

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gtgtggggga cactgctgat gattcccaag attgagatga tgacggtgat gacgactggg
2100
tgaacagcca tcacttcaac attgtgataa tccttcacag cagaaaccga ataaaatact
2160
aacatttcta acaactgctc tgacattgta aagagatcca acagaatcac tcctgctgaa
2220
aaatacgctt tctgccacct acacatttct atttaggaag taaaatttgc ttcatggtca
2280
tgaccccatt agtcagtgtt acagctgtgt tggggatagg aagtatatct ggcagattga
2340
tatttataca ctttttttata aagcagattt taaaatatag taacatccat ttttttccct
2400
tgaaagtgat tctcttataa aaaatgaaag tggagtttaa ggtatatcaa atcgttgtgg
2460
aaggtgatta aaaatcaaaa ttcttttaaa tatcaactta attttttcta agtaagatac
2520
aaaaaatttt catctaaagt aatatttcac tttatattgt aaagaaggta ggtatattgg
2580
tggctgaggt ctcttgaaat tgctaaaggg aaattttttct atggtaatgc tcttacggat
2640
ataaacctca gttaaatgga attatctatg ggatgtgtgg ttctggttaa ctaaaaatta
2700
accagtaaac actctgtagt aaccattaca gaaaatactt ctgccttaaa aaatatgata
2760
tgccagagat gagttagtgt ttcttgacgt tggagacctt ttaaatgcct catctgttgt
2820
actgaacaat tgaaactgca tgcagccata aaagggacaa gaaacagaac tgtttactaa
2880
ctttgggaca tcccctggag tttttaaaaa taaataaata tatatatata taaaaaaaaa
2940
aaa
2943


<210> 5148
<211> 296
<212> PRT
<213> Homo sapiens

<400> 5148
Ala Arg Leu Phe Asp Glu Pro Gln Leu Ala Ser Leu Cys Leu Asp Thr
 1               5                  10                  15
Ile Asp Lys Ser Thr Met Asp Ala Ile Ser Ala Glu Gly Phe Thr Asp
            20                  25                  30
Ile Asp Ile Asp Thr Leu Cys Ala Val Leu Glu Arg Asp Thr Leu Ser
        35                  40                  45
Ile Arg Glu Ser Arg Leu Phe Gly Ala Val Val Arg Trp Ala Glu Ala
    50                  55                  60
Glu Cys Gln Arg Gln Gln Leu Pro Val Thr Phe Gly Asn Lys Gln Lys
65                  70                  75                  80
Val Leu Gly Lys Ala Leu Ser Leu Ile Arg Phe Pro Leu Met Thr Ile
                85                  90                  95
Glu Glu Phe Ala Ala Gly Pro Ala Gln Ser Gly Ile Leu Ser Asp Arg
            100                 105                 110
Glu Val Val Asn Leu Phe Leu His Phe Thr Val Asn Pro Lys Pro Arg
```

4330

```
           115                  120                  125
Val Glu Tyr Ile Asp Arg Pro Arg Cys Cys Leu Arg Gly Lys Glu Cys
     130                  135                  140
Cys Ile Asn Arg Phe Gln Gln Val Glu Ser Arg Trp Gly Tyr Ser Gly
145                  150                  155                  160
Thr Ser Asp Arg Ile Arg Phe Thr Val Asn Arg Arg Ile Ser Ile Val
                165                  170                  175
Gly Phe Gly Leu Tyr Gly Ser Ile His Gly Pro Thr Asp Tyr Gln Val
                180                  185                  190
Asn Ile Gln Ile Ile Glu Tyr Glu Lys Lys Gln Thr Leu Gly Gln Asn
          195                  200                  205
Asp Thr Gly Phe Ser Cys Asp Gly Thr Ala Asn Thr Phe Arg Val Met
     210                  215                  220
Phe Lys Glu Pro Ile Glu Ile Leu Pro Asn Val Cys Tyr Thr Ala Cys
225                  230                  235                  240
Ala Thr Leu Lys Gly Pro Asp Ser His Tyr Gly Thr Lys Gly Leu Lys
                245                  250                  255
Lys Val Val His Glu Thr Pro Ala Ala Ser Lys Thr Val Phe Phe Phe
          260                  265                  270
Phe Ser Ser Pro Gly Asn Asn Asn Gly Thr Ser Ile Glu Asp Gly Gln
          275                  280                  285
Ile Pro Glu Ile Ile Phe Tyr Thr
          290                  295
```

<210> 5149
<211> 533
<212> DNA
<213> Homo sapiens

<400> 5149
ntccggatgg cagttatggc tatggggatc aaagatgacc gtcttaacaa agaccgatgt
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gtacgcctag ccctggttca tgatatggca gaatgcatcg ttggggacat agcaccagca
120
gataacatcc ccaaagaaga aaaacatagg cgagaagagg aagctatgaa gcagataacc
180
cagctcctac cagaggacct cagaaaggag ctctatgaac tttgggaaga gtacgagacc
240
caatctagtg cagaagccaa atttgtgaag cagctagacc aatgtgaaat gattcttcaa
300
gcatctgaat atgaagacct tgaacacaaa cctgggagac tgcaagactt ctatgattcc
360
acagcaggaa aattcaatca ccctgagata gtccagcttg tttctgaact tgaggcagaa
420
agaagcacta acatagctgc agctgccagt gagccacact cctgagacac tctctaaatt
480
gctgcactcc tgtaacaaac attattttcc atttcattgt attgtgtttt gca
533

<210> 5150
<211> 154
<212> PRT
<213> Homo sapiens

<400> 5150
Xaa Arg Met Ala Val Met Ala Met Gly Ile Lys Asp Asp Arg Leu Asn
1   5   10   15
Lys Asp Arg Cys Val Arg Leu Ala Leu Val His Asp Met Ala Glu Cys
        20   25   30
Ile Val Gly Asp Ile Ala Pro Ala Asp Asn Ile Pro Lys Glu Glu Lys
        35   40   45
His Arg Arg Glu Glu Glu Ala Met Lys Gln Ile Thr Gln Leu Leu Pro
    50   55   60
Glu Asp Leu Arg Lys Glu Leu Tyr Glu Leu Trp Glu Glu Tyr Glu Thr
65   70   75   80
Gln Ser Ser Ala Glu Ala Lys Phe Val Lys Gln Leu Asp Gln Cys Glu
            85   90   95
Met Ile Leu Gln Ala Ser Glu Tyr Glu Asp Leu Glu His Lys Pro Gly
        100   105   110
Arg Leu Gln Asp Phe Tyr Asp Ser Thr Ala Gly Lys Phe Asn His Pro
        115   120   125
Glu Ile Val Gln Leu Val Ser Glu Leu Glu Ala Glu Arg Ser Thr Asn
    130   135   140
Ile Ala Ala Ala Ala Ser Glu Pro His Ser
145   150

<210> 5151
<211> 2273
<212> DNA
<213> Homo sapiens

<400> 5151
nggtagtggn agatgtccgg ccggtctaag cgggagtctc gcggttccac tcgcgggaag
60
cgagagtctg agtcgcgggg cagctccggt cgcgtcaagc gggagcgaga tcgggagcgg
120
gagcctgagg cggcgagctc ccggggcagc cctgtgcgcg tgaagcggga gttcgagccg
180
gcgagcgcgc gcgaggcccc ggcttctgtt gtcccgtttg tgcgggtgaa gcgggagcgc
240
gaggtcgatg aggactcgga gcctgagcgg gaggtgcgag caaagaatgg ccgagtggat
300
tctgaggacc ggaggagccg ccactgcctg tacctggaca ccattaacag gagtgtgctg
360
gactttgact ttgagaaact gtgttctatc tccctctcac acatcaatgc ttatgcctgt
420
ctggtgtgtg caagtactt tcaagctttt cacccttccc tacaggccgg ggtttgaagt
480
ctcacgccta cattcacagt gtccagttta gccaccatgt tttcctcaac ctccacaccc
540
tcaagtttta ctgccttcca gacaactatg agatcatcga ttcctcattg gaggatatca
600
cgtatgtgtt tgaagcccac tttcacaaag cagcaaattg caaacttgga caagcaagcc
660
aaattgtccc gggcatatga tggtaccact tacctgccgg gtattgtggg actgaataac
720
ataaaggcca atgattatgc caacgctgtc cttcaggctc tatctaatgt tcctcctctc
780

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cggaactact ttctggaaga agacaattat aagaacatca aacgtcctcc aggggatatc
840
atgttcttgt tggtccagcg ttttggagag ctgatgagaa agctctggaa ccctcgaaat
900
ttcaaggcac atgtgtctcc ccatgagatg cttcaggcag ttgtactttg cagtaagaag
960
acttttcaga tcaccaaaca aggagatggc gttgactttc tgtcttggtt tctgaatgct
1020
ctgcactcag ctctgggggg cacaaagaag aaaaagaaga ctattgtgac tgatgttttc
1080
cagggggtcca tgaggatctt cactaaaaag cttccccatc ctgatctgcc agcagaagaa
1140
aaagagcagt tgctccataa tgacgagtac caggagacaa tggtggagtc cacttttatg
1200
tacctgacgc tggaccttcc tactgccccc ctctacaagg acgagaagga gcagctcatc
1260
attccccaag tgccactctt caacatcctg gctaagttca atggcatcac tgagaaggaa
1320
tataagactt acaaggagaa ctttctgaag cgcttccagc ttaccaagtt gcctccatat
1380
ctaatctttt gtatcaagat attcactaag aacaacttct ttgttgagaa gaatccaact
1440
agttgtcaat ttccctatta caaatgtgga tctgagagaa tacttgtctg aagaagtaca
1500
agcagtacac aagaatacca cctatgacct cattgccaac atcgtgcatg acggcaagcc
1560
ctccgagggc tcctaccgga tccacgtgct tcatcatggg acaggcaaat ggtatgaatt
1620
acaagacctc caggtgactg acatccttcc ccagatgatc acactgtcag aggcttacat
1680
tcagatttgg aagaggcgag ataatgatga aaccaaccag cagggggctt gaaggaggcg
1740
tctagggctt tgctcccaag ggctgtggct gatgatggta aataagaaca cagaagctgt
1800
agctgaacac aggctggctg gtgggcttcc taggccagcc cagcttgtat gggttctggc
1860
tacaccagag caccaagagc ccacttgcct gggatggccc cacactgtca ctcagttgtt
1920
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1980
cttcagcagg gcagaaccct tctccagatg tgtgtaactt atgtcttgag tatctgggag
2040
tagttgaaga acagataatt ccttccaaac atcaagcctt gggattcttg gagcaagcag
2100
aaagccagta acttcgctct gttagaggtg gaggattttc ctatggttcc ccccatttcc
2160
tgatttgtat ttttagatgg attaaatagt ctcctgtttt taaaaaaaaa aaaaaaaaaa
2220
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa
2273

<210> 5152
<211> 324
<212> PRT
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<213> Homo sapiens

<400> 5152
Met	Phe	Ser	Ser	Thr	Ser	Thr	Pro	Ser	Ser	Phe	Thr	Ala	Phe	Gln	Thr
1				5					10					15	

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Met Phe Ser Ser Thr Ser Thr Pro Ser Ser Phe Thr Ala Phe Gln Thr
1                 5                  10                 15
Thr Met Arg Ser Ser Ile Pro His Trp Arg Ile Ser Arg Met Cys Leu
         20                  25                  30
Lys Pro Thr Phe Thr Lys Gln Gln Ile Ala Asn Leu Asp Lys Gln Ala
         35                  40                  45
Lys Leu Ser Arg Ala Tyr Asp Gly Thr Thr Tyr Leu Pro Gly Ile Val
    50             55                  60
Gly Leu Asn Asn Ile Lys Ala Asn Asp Tyr Ala Asn Ala Val Leu Gln
65                  70                  75                  80
Ala Leu Ser Asn Val Pro Pro Leu Arg Asn Tyr Phe Leu Glu Glu Asp
              85                  90                  95
Asn Tyr Lys Asn Ile Lys Arg Pro Pro Gly Asp Ile Met Phe Leu Leu
              100                 105                 110
Val Gln Arg Phe Gly Glu Leu Met Arg Lys Leu Trp Asn Pro Arg Asn
         115                 120                 125
Phe Lys Ala His Val Ser Pro His Glu Met Leu Gln Ala Val Val Leu
    130                 135                 140
Cys Ser Lys Lys Thr Phe Gln Ile Thr Lys Gln Gly Asp Gly Val Asp
145                 150                 155                 160
Phe Leu Ser Trp Phe Leu Asn Ala Leu His Ser Ala Leu Gly Gly Thr
              165                 170                 175
Lys Lys Lys Lys Lys Thr Ile Val Thr Asp Val Phe Gln Gly Ser Met
         180                 185                 190
Arg Ile Phe Thr Lys Lys Leu Pro His Pro Asp Leu Pro Ala Glu Glu
    195                 200                 205
Lys Glu Gln Leu Leu His Asn Asp Glu Tyr Gln Glu Thr Met Val Glu
    210                 215                 220
Ser Thr Phe Met Tyr Leu Thr Leu Asp Leu Pro Thr Ala Pro Leu Tyr
225                 230                 235                 240
Lys Asp Glu Lys Glu Gln Leu Ile Ile Pro Gln Val Pro Leu Phe Asn
              245                 250                 255
Ile Leu Ala Lys Phe Asn Gly Ile Thr Glu Lys Glu Tyr Lys Thr Tyr
         260                 265                 270
Lys Glu Asn Phe Leu Lys Arg Phe Gln Leu Thr Lys Leu Pro Pro Tyr
    275                 280                 285
Leu Ile Phe Cys Ile Lys Ile Phe Thr Lys Asn Asn Phe Phe Val Glu
    290                 295                 300
Lys Asn Pro Thr Ser Cys Gln Phe Pro Tyr Tyr Lys Cys Gly Ser Glu
305                 310                 315                 320
Arg Ile Leu Val
```

<210> 5153
<211> 640
<212> DNA
<213> Homo sapiens

<400> 5153
nngctagcag gagaggagga ggtagatctc attgtacaca tccgtcttct ggagagaaca
60

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acctctccta ccatcccttc cttctacacc ttctctgcct gtcataggtg gctgcaggag
120
gggtccacgt tgggagggac aggtgagctg gcctttggtg ctgacacact cctgactttg
180
ccctttctcc tgcaggggt gccattcccg cagaatgagg ctaatgccat ggatgtggtg
240
gtccagtttg ccatccaccg cctgggcttc cagccccagg acatcatcat ctacgcctgg
300
tccatcggcg gcttcactgc cacgtgggca gccatgtcct acccagatgt tagtgccatg
360
atcctggatg cctcctttga tgacctggtg cccttggcct tgaaggtcat gccagacagc
420
tggagtgagt gcagctccca ggcctgccct tcctgggaag gggtgggctg gaactgggaa
480
ctgttctgag atggctccct tttcttgggt ggggagtaag tcgccccaat gttggaagca
540
ggaggactcc tttgtctggg ggcctcagtt ttctttctcc gtgaatagtg aggacctta
600
tgttgggcaa gggctttgtc tctgccatcc cttcacgcgt
640
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`<210> 5154`
`<211> 162`
`<212> PRT`
`<213> Homo sapiens`

`<400> 5154`
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Xaa Leu Ala Gly Glu Glu Glu Val Asp Leu Ile Val His Ile Arg Leu
 1               5                   10                  15
Leu Glu Arg Thr Thr Ser Pro Thr Ile Pro Ser Phe Tyr Thr Phe Ser
            20                  25                  30
Ala Cys His Arg Trp Leu Gln Glu Gly Ser Thr Leu Gly Gly Thr Gly
        35                  40                  45
Glu Leu Ala Phe Gly Ala Asp Thr Leu Leu Thr Leu Pro Phe Leu Leu
    50                  55                  60
Gln Gly Val Pro Phe Pro Gln Asn Glu Ala Asn Ala Met Asp Val Val
65                  70                  75                  80
Val Gln Phe Ala Ile His Arg Leu Gly Phe Gln Pro Gln Asp Ile Ile
                85                  90                  95
Ile Tyr Ala Trp Ser Ile Gly Gly Phe Thr Ala Thr Trp Ala Ala Met
            100                 105                 110
Ser Tyr Pro Asp Val Ser Ala Met Ile Leu Asp Ala Ser Phe Asp Asp
        115                 120                 125
Leu Val Pro Leu Ala Leu Lys Val Met Pro Asp Ser Trp Ser Glu Cys
    130                 135                 140
Ser Ser Gln Ala Cys Pro Ser Trp Glu Gly Val Gly Trp Asn Trp Glu
145                 150                 155                 160
Leu Phe
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`<210> 5155`
`<211> 1402`
`<212> DNA`
`<213> Homo sapiens`

<400> 5155

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ccaaagtcca gaagttacgc gtcacccttg ctctacagcc aaacatgcag gactctagta
60
acccgcgaaa tgatgggata gcgttgcaaa tccttaaaag agtcttaacg aaatcctggc
120
tgacattgac ttctccactg caaccatcga gttcattgtc tcctaaacct tgccatggag
180
gcctgtggca cctgagccag ccattatcat caccagcact tccatgagct acaagctgga
240
cccactgcag tcctcctgac acactgaaat cagagcctgc acacagagca gcagatgctt
300
caatgtaaag gtcatttcca ggtccttgac aggcgtgcat ctgggccaga tccatggcaa
360
taaccttcag gttgaggcta gagggcttca gatgggcagc ttcgaatgac aggagcaagg
420
aacaagaggc cggaaaggga gggtgacatt ttcagcatct ataagatcaa ctttagaaat
480
atttgggggt tgacaaattc ccatcaagct ctgtggatct tgtacaacta ctcaccaccg
540
gcttctcatc agcacatgat tggtgcaggg ttctgaggat gattttgaga tgttccctga
600
tgtggtcttg tgaggagatt tcatgacgga tggcaggaaa cttcgtggag agatttctga
660
agacactcct gagctcccaa caccgggcaa ctctcttcca gaggatattg gggtggaggg
720
tagaagagag gcaaagtcag gtttgtcttc ggatcccctt tcattctccc tttttcccac
780
cgtaaaccaa ctttggctta cagttagaca ccagttttcg gcagatgaaa tccctctgat
840
ttcaggcatt ttgtcaatta agctgctcag caacaatagg ataaacttat gaaaagaaag
900
gagtagcagt cccacagaca aagcatccag cccctgcact gagacagtat agggaaggga
960
cttggtcctg gcagacagga cagataatca acatcctagt gggccttaca catgtgggca
1020
tattctttc cataccttct tgtctgtttt aacaagctaa ccccagtcac agtagcagag
1080
agagggtcca tcctaactta gctgaccagg ctggattcct aatcataaaa ccaaaaaagg
1140
aagaacctaa ccatttctct ctttcagcta tgtgttccaa gattactgaa gcaggattct
1200
ggccttcctg ataagaacat gaccagatcc agctggtttg caacaagatg aacttcagtg
1260
ctgagctttc accagttttt tctcactaca atctcattgt aatactaaaa tctccaccca
1320
agatggaggt tatctgccat tttctgtact ctgctccgtt gtgctgctag agccacaagc
1380
ctattaaact ttgcctgaaa ta
1402
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<210> 5156
<211> 118
<212> PRT

<213> Homo sapiens

<400> 5156
Met Asp Leu Ala Gln Met His Ala Cys Gln Gly Pro Gly Asn Asp Leu
1   5   10   15
Tyr Ile Glu Ala Ser Ala Ala Leu Cys Ala Gly Ser Asp Phe Ser Val
            20   25   30
Ser Gly Gly Leu Gln Trp Val Gln Leu Val Ala His Gly Ser Ala Gly
        35   40   45
Asp Asp Asn Gly Trp Leu Arg Cys His Arg Pro Pro Trp Gln Gly Leu
        50   55   60
Gly Asp Asn Glu Leu Asp Gly Cys Ser Gly Glu Val Asn Val Ser Gln
65   70   75   80
Asp Phe Val Lys Thr Leu Leu Arg Ile Cys Asn Ala Ile Pro Ser Phe
                85   90   95
Arg Gly Leu Leu Glu Ser Cys Met Phe Gly Cys Arg Ala Arg Val Thr
            100   105   110
Arg Asn Phe Trp Thr Leu
        115

<210> 5157
<211> 1310
<212> DNA
<213> Homo sapiens

<400> 5157
tgatcagaaa ttacctttga cgtgcagtga cagttgattt cctcttgaac tgccggtgaa
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aacagtctag tacacaggtg ctgtcagccc agggtgggag caggaaatga ttgctgagcc
120
cggggcaggg gaattgcatc tgcaggaaag agatgcagca tgctcctcac tcctgagtgc
180
ccacctgtcc tgcttctctg caggtgaaaa ctctggggga tgctgatcaa tagagcttgg
240
tcccaagctc tactgggccc ttggaggtag caaggccact gggttgctat cctcttgctg
300
gggatagcaa ccactggttt gcaaccactg ggttgctatc cttttgctat cctcttgctc
360
atgaccagcc atatggtgag gctggggagt tcacatcctc aggcaggaac tagcagttgt
420
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<210> 5158
<211> 82
<212> PRT
<213> Homo sapiens

<400> 5158
Met Thr Ser His Met Val Arg Leu Gly Ser Ser His Pro Gln Ala Gly
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Thr Ser Ser Cys Leu Ser Ser Asn Ala Ser Arg Met Leu His Cys Ser
             20   25   30
Gln Glu Leu Ala Ile Arg Tyr Val Leu Cys Gly Gln Ser Ala Ser Gln
         35   40   45
Thr His Arg Cys Ser Pro Ala Trp Leu Ser Trp Asp Leu Asn Leu Leu
     50   55   60
Val Lys Ser Phe Ser Leu Ser Glu Val Pro Ser Leu Gln Met Leu Asn
65   70   75   80
Leu Ala

<210> 5159
<211> 3233
<212> DNA
<213> Homo sapiens

<400> 5159
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240
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360

4338

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1920
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1980
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4339

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2160
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2220
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2280
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2340
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2520
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<210> 5160
<211> 849
<212> PRT
<213> Homo sapiens
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<400> 5160
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Thr His Asp Arg Met Lys Asp Val Lys Arg His Ile Thr Ala Arg Leu
                20                  25                  30
Asp Trp Gly Asn Glu Gln Leu Gly Leu Asp Leu Val Pro Arg Lys Glu
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            35                    40                    45
Tyr Ala Met Val Asp Pro Glu Asp Ile Ser Ile Thr Glu Leu Tyr Arg
    50                    55                    60
Leu Ser Met Leu Ile Met Phe Leu Leu Gly Gly Val Ile Gln Met Glu
65                    70                    75                    80
His Arg His Arg Lys Lys Asp Thr Pro Val Gln Ala Ser Ser His His
                  85                    90                    95
Leu Phe Val Gln Met Lys Ser Leu Met Cys Ser Asn Leu Gly Glu Glu
            100                   105                   110
Leu Glu Val Ile Phe Ser Leu Phe Asp Ser Lys Glu Asn Arg Pro Ile
        115                   120                   125
Ser Glu Arg Phe Phe Leu Arg Leu Asn Arg Asn Gly Leu Pro Lys Ala
    130                   135                   140
Pro Asp Lys Pro Glu Arg His Cys Ser Leu Phe Val Asp Leu Gly Ser
145                   150                   155                   160
Ser Glu Leu Arg Lys Asp Ile Tyr Ile Thr Val His Ile Ile Arg Ile
                  165                   170                   175
Gly Arg Met Gly Ala Gly Glu Lys Lys Asn Ala Cys Ser Val Gln Tyr
            180                   185                   190
Arg Arg Pro Phe Gly Cys Ala Val Leu Ser Ile Ala Asp Leu Leu Thr
        195                   200                   205
Gly Glu Thr Lys Asp Asp Leu Ile Leu Lys Val Tyr Met Cys Asn Thr
    210                   215                   220
Glu Ser Glu Trp Tyr Gln Ile His Glu Asn Ile Ile Lys Lys Leu Asn
225                   230                   235                   240
Ala Arg Tyr Asn Leu Thr Gly Ser Asn Ala Gly Leu Ala Val Ser Leu
                  245                   250                   255
Gln Leu Leu His Gly Asp Ile Glu Gln Ile Arg Arg Glu Tyr Ser Ser
            260                   265                   270
Val Phe Ser His Gly Val Ser Ile Thr Arg Lys Leu Gly Phe Ser Asn
        275                   280                   285
Ile Ile Met Pro Gly Glu Met Arg Asn Asp Leu Tyr Ile Thr Ile Glu
    290                   295                   300
Arg Gly Glu Phe Glu Lys Gly Gly Lys Ser Val Ala Arg Asn Val Glu
305                   310                   315                   320
Val Thr Met Phe Ile Val Asp Ser Ser Gly Gln Thr Leu Lys Asp Phe
                  325                   330                   335
Ile Ser Phe Gly Ser Gly Glu Pro Pro Ala Ser Glu Tyr His Ser Phe
            340                   345                   350
Val Leu Tyr His Asn Asn Ser Pro Arg Trp Ser Glu Leu Leu Lys Leu
        355                   360                   365
Pro Ile Pro Val Asp Lys Phe Arg Gly Ala His Ile Arg Phe Glu Phe
    370                   375                   380
Arg His Cys Ser Thr Lys Glu Lys Gly Glu Lys Lys Leu Phe Gly Phe
385                   390                   395                   400
Ser Phe Val Pro Leu Met Gln Glu Asp Gly Arg Thr Leu Pro Asp Gly
                  405                   410                   415
Thr His Glu Leu Ile Val His Lys Cys Glu Glu Asn Thr Asn Leu Gln
            420                   425                   430
Asp Thr Thr Arg Tyr Leu Lys Leu Pro Phe Ser Lys Gly Ile Phe Leu
        435                   440                   445
Gly Asn Asn Asn Gln Ala Met Lys Ala Thr Lys Glu Ser Phe Cys Ile
    450                   455                   460
Thr Ser Phe Leu Cys Ser Thr Lys Leu Thr Gln Asn Gly Asp Met Leu
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465                     470                 475                     480
Asp Leu Leu Lys Trp Arg Thr His Pro Asp Lys Ile Thr Gly Cys Leu
                 485                 490                 495
Ser Lys Leu Lys Glu Ile Asp Gly Ser Glu Ile Val Lys Phe Leu Gln
                 500                 505                 510
Asp Thr Leu Asp Thr Leu Phe Gly Ile Leu Asp Glu Asn Ser Gln Lys
                 515                 520                 525
Tyr Gly Ser Lys Val Phe Asp Ser Leu Val His Ile Ile Asn Leu Leu
        530                 535                 540
Gln Asp Ser Lys Phe His His Phe Lys Pro Val Met Asp Thr Tyr Ile
545                 550                 555                 560
Glu Ser His Phe Ala Gly Ala Leu Ala Tyr Arg Asp Leu Ile Lys Val
                 565                 570                 575
Leu Lys Trp Tyr Val Asp Arg Ile Thr Glu Ala Glu Arg Gln Glu His
                 580                 585                 590
Ile Gln Glu Val Leu Lys Ala Gln Glu Tyr Ile Phe Lys Tyr Ile Val
                 595                 600                 605
Gln Ser Arg Arg Leu Phe Ser Leu Ala Thr Gly Gly Gln Asn Glu Glu
        610                 615                 620
Glu Phe Arg Cys Cys Ile Gln Glu Leu Leu Met Ser Val Arg Phe Phe
625                 630                 635                 640
Leu Ser Gln Glu Ser Lys Gly Ser Gly Ala Leu Ser Gln Ser Gln Ala
                 645                 650                 655
Val Phe Leu Ser Ser Phe Pro Ala Val Tyr Ser Glu Leu Leu Lys Leu
                 660                 665                 670
Phe Asp Val Arg Glu Val Ala Asn Leu Val Gln Asp Thr Leu Gly Ser
        675                 680                 685
Leu Pro Thr Ile Leu His Val Asp Asp Ser Leu Gln Ala Ile Lys Leu
        690                 695                 700
Gln Cys Ile Gly Lys Thr Val Glu Ser Gln Leu Tyr Thr Asn Pro Asp
705                 710                 715                 720
Ser Arg Tyr Ile Leu Leu Pro Val Val Leu His His Leu His Ile His
                 725                 730                 735
Leu Gln Glu Gln Lys Asp Leu Ile Met Cys Ala Arg Ile Leu Ser Asn
        740                 745                 750
Val Phe Cys Leu Ile Lys Lys Asn Ser Ser Glu Lys Ser Val Leu Glu
        755                 760                 765
Glu Ile Asp Val Ile Val Ala Ser Leu Leu Asp Ile Leu Leu Arg Thr
770                 775                 780
Ile Leu Glu Ile Thr Ser Arg Pro Gln Pro Ser Ser Ser Ala Met Arg
785                 790                 795                 800
Phe Gln Phe Gln Asp Val Thr Gly Glu Phe Val Ala Cys Leu Leu Ser
                 805                 810                 815
Leu Leu Arg Gln Met Thr Asp Arg His Tyr Gln Gln Leu Leu Asp Ser
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Phe Asn Thr Lys Glu Glu Leu Arg Val Ser Asp Ile Leu Lys Cys Phe
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<210> 5161
<211> 1645
<212> DNA
<213> Homo sapiens
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<400> 5161

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120

ggctgcctta gtacagaatc ttataagtcc tcctccctca gaggctacag atggtgttcc
180

gaggccaggg gagtttaaag ctcgatttca cccgcgcagc ctccaatccg ggtgttctga
240

gaatcagcca tgtcatccct gtacccatct ctagaggacc taaaagtgga ccaagccatt
300

caggcccagg tcagagcctc acccaagatg ccagccctgc cagtccaggc aacagccatt
360

tccccaccac cagttttgta cccaaacttg gcagaactgg aaaattatat gggtctttcc
420

ctctccagcc aagaagtcca ggagagcctg cttcagattc cagagggtga cagtacagcg
480

gtctcgggcc ccgggcccgg ccagatggtg gcaccggtaa ccgggtacag cctgggcgtg
540

cggcgagctg agatcaagcc cggggtgcgc gagatccacc tgtgcaagga cgagcgcggc
600

aagaccgggc tgaggctgcg gaaggtcgac caggggctct ttgtgcagtt ggtccaggcc
660

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720

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840

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900

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960

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1080

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1320

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1380

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<210> 5162
<211> 207
<212> PRT
<213> Homo sapiens

<400> 5162
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Ile Lys Pro Gly Val Arg Glu Ile His Leu Cys Lys Asp Glu Arg Gly
            20   25   30
Lys Thr Gly Leu Arg Leu Arg Lys Val Asp Gln Gly Leu Phe Val Gln
        35   40   45
Leu Val Gln Ala Asn Thr Pro Ala Ser Leu Val Gly Leu Arg Phe Gly
    50   55   60
Asp Gln Leu Leu Gln Ile Asp Gly Arg Asp Cys Ala Gly Trp Ser Ser
65   70   75   80
His Lys Ala His Gln Val Val Lys Lys Ala Ser Gly Asp Lys Ile Val
                85   90   95
Val Val Val Arg Asp Arg Pro Phe Gln Arg Thr Val Thr Met His Lys
                100   105   110
Asp Ser Met Gly His Val Gly Phe Val Ile Lys Lys Gly Lys Ile Val
            115   120   125
Ser Leu Val Lys Gly Ser Ser Ala Ala Cys Asn Gly Leu Leu Thr Asn
    130   135   140
His Tyr Val Cys Glu Val Asp Gly Gln Asn Val Ile Gly Leu Lys Asp
145   150   155   160
Lys Lys Ile Met Glu Ile Leu Ala Thr Ala Gly Asn Val Val Thr Leu
                165   170   175
Thr Ile Ile Pro Ser Val Ile Tyr Glu His Met Val Lys Lys Leu Pro
            180   185   190
Pro Val Leu Leu His His Thr Met Asp His Ser Ile Pro Asp Ala
        195   200   205

<210> 5163
<211> 1187
<212> DNA
<213> Homo sapiens

<400> 5163
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300

4344

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1187

<210> 5164
<211> 213
<212> PRT
<213> Homo sapiens

<400> 5164
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Tyr Tyr Glu Gly Ala Phe Val Asp Gly Glu Ile Thr Gly Glu Gly Arg
            20   25   30
Arg His Trp Ala Trp Ser Gly Asp Thr Phe Ser Gly Gln Phe Val Leu
            35   40   45
Gly Glu Pro Gln Gly Tyr Gly Val Met Glu Tyr Lys Ala Gly Gly Cys
        50   55   60
Tyr Glu Gly Glu Val Ser His Gly Met Arg Glu Gly His Gly Phe Leu
65   70   75   80
Val Asp Arg Asp Gly Gln Val Tyr Gln Gly Ser Phe His Asp Asn Lys
                85   90   95
Arg His Gly Pro Gly Gln Met Leu Phe Gln Asn Gly Asp Lys Tyr Asp
                100   105   110
Gly Asp Trp Val Arg Asp Arg Arg Gln Gly His Gly Val Leu Arg Cys
            115   120   125
Ala Asp Gly Ser Thr Tyr Lys Gly Gln Trp His Ser Asp Val Phe Ser

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        130                    135                    140
Gly Leu Gly Ser Met Ala His Cys Ser Gly Val Thr Tyr Tyr Gly Leu
145                    150                    155                    160
Trp Ile Asn Gly His Pro Ala Glu Gln Ala Thr Arg Ile Val Ile Leu
                165                    170                    175
Gly Pro Glu Val Met Glu Val Ala Gln Gly Ser Pro Phe Ser Val Asn
                180                    185                    190
Val Gln Leu Leu Gln Asp His Gly Glu Ile Ala Lys Ser Lys His Leu
        195                    200                    205
Gln Gly Glu Met Thr
        210
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<210> 5165
<211> 2370
<212> DNA
<213> Homo sapiens

<400> 5165

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1080
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1200

tgtaccctgg agccggtcac tccggtgcct ctcatcagca ccctagagct gagcggcggg
1260

ggcgacgtgg ccacgctgga gctccacgga gagaacttcc acgcggggct caaggtgtgg
1320

tttggggacg tggaggcaga aaccatgtac aggtacgggg tgnngagccc gcggtccctg
1380

gtgtgcgtgg tgccggacgt ggcggccttc tgcagcgact ggcgctggct cgcgcgctccc
1440

atcacaatcc ccatgagcct ggtgcgcgcc gacgggctct tctaccctag tgccttctcc
1500

ttcacctaca ccccggaata cagcgtgcgg ccgggtcacc ccggcgtccc cgagcccgcc
1560

accgacgccg acgcgctcct ggagagcatc catcaggagt tcacgcgcac caacttccac
1620

ctcttcatcc agacttaggc gcgcccggta gccccggctg cccaccctgg agggctgcgc
1680

ccgcgccagg cgcggggacg tgtttctggg ttctaggccc tgcttccttg cccctttgct
1740

gcagaagggc agctgaaggc tcaccctaga aaccgggcct ggtgggtctt acccggctca
1800

ctccctccct tgtccttaca catacaggaa gacaagacct gagtggtgct gtctttgtgt
1860

ccgtcgtgta tggctctccc tgtcttcatt tcttctcact ctgtctctaa acctctctct
1920

ctctcccttc cccctcagta cttagtctac agacctatgt gcgtgtccct atccttctgt
1980

cctttctct cttcagctct ccctgcctct cacacacaat tttacatgcc ccgaggagcc
2040

aagtttggga catttaccct ccaggcatct atgtcccctc ttgaagagaa aacacacagc
2100

ttcacacatc caggcatagg gggcaagctc ttggggcatc aggaccctgg agcaccaggt
2160

ccttcctgga atattagatc cacctggaga accgggtctc tctaagtctc acctggggaa
2220

ttcggtccca cctggggcac cagttcccac ctagagcact gtgtcctgcc ctagagcaca
2280

aagacctgct cctcccgaga ctctctctga ctgcagccag gcatagtacc cttgcctgtg
2340

tttgctccct ggtccacaga tttggtggct
2370

<210> 5166
<211> 521
<212> PRT
<213> Homo sapiens

<400> 5166
Met Asp Pro Ala Gly Ala Ala Asp Pro Ser Val Pro Pro Asn Pro Leu
 1   5   10   15
Thr His Leu Ser Leu Gln Asp Arg Ser Glu Met Gln Leu Gln Ser Glu

4347

```
                    20                      25                      30
Ala Asp Arg Arg Ser Leu Pro Gly Thr Trp Thr Arg Ser Ser Pro Glu
            35                      40                      45
His Thr Thr Ile Leu Arg Gly Gly Val Arg Arg Cys Leu Gln Gln Gln
        50                      55                      60
Cys Glu Gln Thr Val Arg Ile Leu His Ala Lys Val Ala Gln Lys Ser
65                      70                      75                      80
Tyr Gly Asn Glu Lys Arg Phe Phe Cys Pro Pro Pro Cys Val Tyr Leu
                85                      90                      95
Ser Gly Pro Gly Trp Arg Val Lys Pro Gly Gln Asp Gln Ala His Gln
            100                     105                     110
Ala Gly Glu Thr Gly Pro Thr Val Cys Gly Tyr Met Gly Leu Asp Ser
            115                     120                     125
Ala Ser Gly Ser Ala Thr Glu Thr Gln Lys Leu Asn Phe Glu Gln Gln
        130                     135                     140
Pro Asp Ser Arg Glu Phe Gly Cys Ala Lys Thr Leu Tyr Ile Ser Asp
145                     150                     155                     160
Ala Asp Lys Arg Lys His Phe Arg Leu Val Leu Arg Leu Val Leu Arg
                165                     170                     175
Gly Gly Arg Glu Leu Gly Thr Phe His Ser Arg Leu Ile Lys Val Ile
            180                     185                     190
Ser Lys Pro Ser Gln Lys Lys Gln Ser Leu Lys Asn Thr Asp Leu Cys
            195                     200                     205
Ile Ser Ser Gly Ser Lys Val Ser Leu Phe Asn Arg Leu Arg Ser Gln
        210                     215                     220
Thr Val Ser Thr Arg Tyr Leu Ser Val Glu Asp Gly Ala Phe Val Ala
225                     230                     235                     240
Ser Ala Arg Gln Trp Ala Ala Phe Thr Leu His Leu Ala Asp Gly His
                245                     250                     255
Ser Ala Gln Gly Asp Phe Pro Pro Arg Glu Gly Tyr Val Arg Tyr Gly
            260                     265                     270
Ser Leu Val Gln Leu Val Cys Thr Val Thr Gly Ile Thr Leu Pro Pro
            275                     280                     285
Met Ile Ile Arg Lys Val Ala Lys Gln Cys Ala Leu Leu Asp Val Asp
        290                     295                     300
Glu Pro Ile Ser Gln Leu His Lys Cys Ala Phe Gln Phe Pro Gly Ser
305                     310                     315                     320
Pro Pro Gly Gly Gly Gly Thr Tyr Leu Cys Leu Ala Thr Glu Lys Val
                325                     330                     335
Val Gln Phe Gln Ala Ser Pro Cys Pro Lys Glu Ala Asn Arg Ala Leu
            340                     345                     350
Leu Asn Asp Ser Ser Cys Trp Thr Ile Ile Gly Thr Glu Ser Val Glu
            355                     360                     365
Phe Ser Phe Ser Thr Ser Leu Ala Cys Thr Leu Glu Pro Val Thr Pro
        370                     375                     380
Val Pro Leu Ile Ser Thr Leu Glu Leu Ser Gly Gly Gly Asp Val Ala
385                     390                     395                     400
Thr Leu Glu Leu His Gly Glu Asn Phe His Ala Gly Leu Lys Val Trp
            405                     410                     415
Phe Gly Asp Val Glu Ala Glu Thr Met Tyr Arg Tyr Gly Val Xaa Ser
            420                     425                     430
Pro Arg Ser Leu Val Cys Val Val Pro Asp Val Ala Ala Phe Cys Ser
        435                     440                     445
Asp Trp Arg Trp Leu Arg Ala Pro Ile Thr Ile Pro Met Ser Leu Val
```

```
           450                      455                   460
Arg Ala Asp Gly Leu Phe Tyr Pro Ser Ala Phe Ser Phe Thr Tyr Thr
465                    470                      475                   480
Pro Glu Tyr Ser Val Arg Pro Gly His Pro Gly Val Pro Glu Pro Ala
                     485                   490                   495
Thr Asp Ala Asp Ala Leu Leu Glu Ser Ile His Gln Glu Phe Thr Arg
                500                   505                   510
Thr Asn Phe His Leu Phe Ile Gln Thr
          515                   520
```

```
<210> 5167
<211> 878
<212> DNA
<213> Homo sapiens

<400> 5167
gggccccgga ccaggcgctg gggacacagc agtgaaaata ctaacattgt ttctgccctc
60
acggagctca cagtgtaaca gggagacaaa tagacctgtc agtagataac atgaaaataa
120
ttggactgtg tgctgcagac acaatatccc aggtctatga gaatgtcaat acagacttca
180
cgtgggaaat ggtgaggcaa taaggatcgt ttcccttgat gaaatggagc ttgcagaaga
240
aggcagggtc agttgtgggg agctctgggt ggaggtggag ggagtgcatt ccaagctgag
300
ccaagctatg acacctgagt ttcctgcctc tgtgctgcct ccctgttttc cattcccggt
360
tctcagcttc acttgtgggc tgagagtccc tgcgtgggtt atttttctgc ctttctcagg
420
gccttgggtt ccccaaatgt cacatgggca cagtaacacc catgtcctag ggttgaagat
480
ggcatgatat gatgtatgta aaatgcttgg cacaaggttt ctcaccgaag tctggaggag
540
ctgtccaggg ttctggagac gaaacggagc ccgctgggaa ctgtcctgag ccccggtgct
600
gaaacagatc gcggttctct tctcggacct cccgagaggc gctgtccgga tatttggtgc
660
tcccaagcag tcagccctgc tggtctctgc tttccagacc gtcaaacttc gccatctctg
720
tccctttttg ggaaaatgtc catgcgccaa cctgcaaacc agcctcattc ccggcatccc
780
acgtccctca gaccacccct cctcccacgc agctgcggga ctccccctct gtgtgcctca
840
cctgcttcca gtcttgttgg cagatgcagg tgtcccgt
878
```

```
<210> 5168
<211> 199
<212> PRT
<213> Homo sapiens

<400> 5168
Met Pro Gly Met Arg Leu Val Cys Arg Leu Ala His Gly His Phe Pro
```

```
1                 5                    10                   15
Lys Lys Gly Gln Arg Trp Arg Ser Leu Thr Val Trp Lys Ala Glu Thr
            20                   25                   30
Ser Arg Ala Asp Cys Leu Gly Ala Pro Asn Ile Arg Thr Ala Pro Leu
        35                   40                   45
Gly Arg Ser Glu Lys Arg Thr Ala Ile Cys Phe Ser Thr Gly Ala Gln
    50                   55                   60
Asp Ser Ser Gln Arg Ala Pro Phe Arg Leu Gln Asn Pro Gly Gln Leu
65                   70                   75                   80
Leu Gln Thr Ser Val Arg Asn Leu Val Pro Ser Ile Leu His Thr Ser
                85                   90                   95
Tyr His Ala Ile Phe Asn Pro Arg Thr Trp Val Leu Leu Cys Pro Cys
                100                  105                  110
Asp Ile Trp Gly Thr Gln Gly Pro Glu Lys Gly Arg Lys Ile Thr His
        115                  120                  125
Ala Gly Thr Leu Ser Pro Gln Val Lys Leu Arg Thr Gly Asn Gly Lys
    130                  135                  140
Gln Gly Gly Ser Thr Glu Ala Gly Asn Ser Gly Val Ile Ala Trp Leu
145                  150                  155                  160
Ser Leu Glu Cys Thr Pro Ser Thr Ser Thr Gln Ser Ser Pro Gln Leu
                165                  170                  175
Thr Leu Pro Ser Ser Ala Ser Ser Ile Ser Ser Arg Glu Thr Ile Leu
                180                  185                  190
Ile Ala Ser Pro Phe Pro Thr
                195
```

```
<210> 5169
<211> 609
<212> DNA
<213> Homo sapiens
```

```
<400> 5169
accggtggct ttgcactcta cccgctgctc aacgaggctg cgccgttggc gctggggggcc
60
ggtttggtgc ctgaggagct gccaccatcc cgcggggggcc tgggtgaggc actgggtgcc
120
gtggagctta gcctcagcga gttcctgcta ctcttcacca ctgctggcat ctacgtggat
180
ggcgcaggcc gcaagtctcg tggccacgag ctgttgtggc cagcagcgcc catgggctgg
240
gggtatgcgg cccccctacct gacagtgttc agcgagaact ccatcgatgt gtttgacgtg
300
aggagggcag aatgggtgca gaccgtgccg ctcaagaagg tgcggcccct caatccagag
360
ggctccctgt tcctctacgg caccgagaag gtccgcctga cctacctcag gaaccagctg
420
gcagagaagg acgagttcga catcccggac ctcaccgaca acagccggcg ccagctgttc
480
ctcaccaaga gcaagcgccg cttcttttttc cgcgtgtcgg aggagcagca gaagcagcag
540
cgcagggaga tgctgaagga ccctttttgtg cgctccaagc tcatctcgcc gcctaccaac
600
ttcaaccac
609
```

<210> 5170
<211> 203
<212> PRT
<213> Homo sapiens

<400> 5170
Thr Gly Gly Phe Ala Leu Tyr Pro Leu Leu Asn Glu Ala Ala Pro Leu
1   5   10   15
Ala Leu Gly Ala Gly Leu Val Pro Glu Glu Leu Pro Pro Ser Arg Gly
            20   25   30
Gly Leu Gly Glu Ala Leu Gly Ala Val Glu Leu Ser Leu Ser Glu Phe
            35   40   45
Leu Leu Leu Phe Thr Thr Ala Gly Ile Tyr Val Asp Gly Ala Gly Arg
        50   55   60
Lys Ser Arg Gly His Glu Leu Leu Trp Pro Ala Ala Pro Met Gly Trp
65   70   75   80
Gly Tyr Ala Ala Pro Tyr Leu Thr Val Phe Ser Glu Asn Ser Ile Asp
                85   90   95
Val Phe Asp Val Arg Arg Ala Glu Trp Val Gln Thr Val Pro Leu Lys
            100   105   110
Lys Val Arg Pro Leu Asn Pro Glu Gly Ser Leu Phe Leu Tyr Gly Thr
            115   120   125
Glu Lys Val Arg Leu Thr Tyr Leu Arg Asn Gln Leu Ala Glu Lys Asp
        130   135   140
Glu Phe Asp Ile Pro Asp Leu Thr Asp Asn Ser Arg Arg Gln Leu Phe
145   150   155   160
Leu Thr Lys Ser Lys Arg Arg Phe Phe Phe Arg Val Ser Glu Glu Gln
                165   170   175
Gln Lys Gln Gln Arg Arg Glu Met Leu Lys Asp Pro Phe Val Arg Ser
            180   185   190
Lys Leu Ile Ser Pro Pro Thr Asn Phe Asn His
            195   200

<210> 5171
<211> 2060
<212> DNA
<213> Homo sapiens

<400> 5171
gaacagaggg ggtggaaact gcatcacaga tgttttccaa ggtccagggt ggaatctgag
60
ctctagtgtc tgactttgag atgcattata tttttaacac ataaatgagg ggatccatat
120
cacattcttt cttgtggacc accaaattga aggctttctt gtaattcaca agcagcagct
180
ctccagcatc tctccgtagc ctgggtgaag tcccagaagc tggtgtgcat cattttccaa
240
ggtggcagag ctgcttgctc tgcagatcat tcctttgaga gaggagtaca agtgaagaaa
300
caaggaggca cttcctgtag gagcactgat gtgccttgtc cacactcccc tctgagcttt
360
actggtaaga gagctccgac tgaacatgct gagcagttga gcactttttcc atcagcaaca
420

```
acagcgagga tggaaatgga aaggaaccga actaaaatgc atttcccttt gcagggcaga
480
gagctaagct cttaggaata gtgttataga aataagcacc ctaacttcaa ttcctgaaaa
540
tgttggttaa tggagagaat tttggagttt cacttaatat tttcccatcg gtcgccataa
600
ataagtcttc aggcgctcct agaagagtcc cagcccaagg ctcgattaag gaccacactg
660
caggtctgag gctcactgct ctgagtcctg aacaccagag ccctgcagag agtggtgata
720
acacatcatc tctgcaaaga ggaacctctc ccccggccgc cacttcactc aggcttctac
780
tgagcagcaa ggacagcctg ggtttcaaat gccacttccc ctgctttagg gatccaggtg
840
tcctgatagc gtgaccctgc tgaggcaagg tatcaactcc gagagtgact gagtcactga
900
gcgtggcaca tgaacaaacg tcatgacaaa gattctctga gtgaagttaa caccacgtat
960
tttacctttg caaaaaacaa actggcaccc tgagttctaa ctacggacgg acgatatctt
1020
tgcctccaca cccagattcc tggaaatggc taacgtttcc tttctagggg aagggtcgag
1080
gaatactcaa gtgctagctt agcagctttg ttcagtccag atcagagctg ttaggtaaag
1140
gcctaaccac ctccctgcag tctcttatat ctcaagcttt aggaacccat ttctaaatgt
1200
acactagcgg agaatttata ttgtcagcct tgattaccat aggacaggca gaaaggcgat
1260
aatttgtatc ttttaatata aaagaagctt ttaacttttc cagcctatta ttataactga
1320
gttatattca ctgtggctca aactaattgg cattgtggaa catttcttta ccttcaaagt
1380
tttctccacc aatcatttca gttctattgc agtcctggtg ccatatgtcc cctgcaaatt
1440
gtgaaagtaa ttagtgacaa aatagcagcc tgctcctttt caatggcgaa actgtcggca
1500
ttagcagttt tgggtaagct ggcggtacta taacacgtac tggaaacctg ttcctcatca
1560
ccacctacca gattctggaa atgccgtctt ctagaaaacg atggcgtttg tggtggtctt
1620
ctttttgaaag gaacagtaat ttgtgtggat attgttaaag tgtttaaaga atattttgac
1680
aattaagttt acattttaca attgctttat tttttattaa aatagttgta tataaatatt
1740
accctatttc actgttgttc aagtaaatct aaaccttgta gacaagtgag tcacctgata
1800
tgtatagaag ctgtgatata tagagtacat ttattgtgta aatgtttatg aatataattg
1860
ttcctgtgtt tttataagtt ggggatattt tgttgtttta cggcaacaaa atttattgca
1920
tttaaatggt ttttatgtaa tagaaatcac gcaaaatagt gaaggattta aaatatgtat
1980
atgatacatg taaatgtaca aactttagaa agaaataaat ccaacaaatt tcaaaaaaaa
2040
```

                                      4352

```
aaaaaaaaaa aaaaaaaaaa
2060


<210> 5172
<211> 104
<212> PRT
<213> Homo sapiens


<400> 5172
Met Leu Val Asn Gly Glu Asn Phe Gly Val Ser Leu Asn Ile Phe Pro
1               5                   10                  15
Ser Val Ala Ile Asn Lys Ser Ser Gly Ala Pro Arg Arg Val Pro Ala
            20                  25                  30
Gln Gly Ser Ile Lys Asp His Thr Ala Gly Leu Arg Leu Thr Ala Leu
        35                  40                  45
Ser Pro Glu His Gln Ser Pro Ala Glu Ser Gly Asp Asn Thr Ser Ser
    50                  55                  60
Leu Gln Arg Gly Thr Ser Pro Pro Ala Ala Thr Ser Leu Arg Leu Leu
65                  70                  75                  80
Leu Ser Ser Lys Asp Ser Leu Gly Phe Lys Cys His Phe Pro Cys Phe
                85                  90                  95
Arg Asp Pro Gly Val Leu Ile Ala
                100


<210> 5173
<211> 557
<212> DNA
<213> Homo sapiens


<400> 5173
ctttgatgcc tttattgatt caacacatgc ttattatatg cttgctgtgt gccgggcccc
60
agaccaggcg ctggagacac agcagtgaaa atactaacat tgtttctgcc ctcacggagc
120
tcacagtgta acagggagac aaatagacct gtcagtagat aacatgaaaa taattggact
180
atgtgctgca gacacaatat cccaggtcta tgagaatgtc aatacagact tcacgtggga
240
aatggtgagg caataaggat cgtttccctt gatgaaatgg agcttgcaga agaaggcagg
300
gtcagttgtg gggagctctg gttggaggtg gagggagtgc attccaagct ggaggagctg
360
tccagggttc tggagactaa acggagcccg ctgggaactg tcctgagccc cggtgctgaa
420
acagatcgcg gttctcttct cggacctccc gagaagcgct gtccggatat ttggtgctcc
480
caagcagtca gccctgctgg tctctgcttt ccagaccggc aaacttcgcc gtctctgtcc
540
ctttctggga aaatggc
557


<210> 5174
<211> 93
<212> PRT
```

4353

<213> Homo sapiens

<400> 5174
Met Glu Leu Ala Glu Glu Gly Arg Val Ser Cys Gly Glu Leu Trp Leu
1   5   10   15
Glu Val Glu Gly Val His Ser Lys Leu Glu Glu Leu Ser Arg Val Leu
            20   25   30
Glu Thr Lys Arg Ser Pro Leu Gly Thr Val Leu Ser Pro Gly Ala Glu
        35   40   45
Thr Asp Arg Gly Ser Leu Leu Gly Pro Pro Glu Lys Arg Cys Pro Asp
    50   55   60
Ile Trp Cys Ser Gln Ala Val Ser Pro Ala Gly Leu Cys Phe Pro Asp
65   70   75   80
Arg Gln Thr Ser Pro Ser Leu Ser Leu Ser Gly Lys Met
                85   90

<210> 5175
<211> 272
<212> DNA
<213> Homo sapiens

<400> 5175
ccatggcagc tccagagacc aggtggaggg gaaatcaccc cacgctcccg agcagagagc
60
ttcggagcca gccagcctca ctgtgcgtgg cccacaacag ctgtctccat gtgtcacgtg
120
agggctgccc aacaccaggt agggcagcaa cgcccacgcc ctcgccgggc acagcctccc
180
agaggtcact gccatgccgc actgaccgga gagagggcag tggtgagagg tgcatgccac
240
cccaggcttg ttccgaaggc ccnnnnnncc nc
272

<210> 5176
<211> 90
<212> PRT
<213> Homo sapiens

<400> 5176
Met Ala Ala Pro Glu Thr Arg Trp Arg Gly Asn His Pro Thr Leu Pro
1   5   10   15
Ser Arg Glu Leu Arg Ser Gln Pro Ala Ser Leu Cys Val Ala His Asn
            20   25   30
Ser Cys Leu His Val Ser Arg Glu Gly Cys Pro Thr Pro Gly Arg Ala
        35   40   45
Ala Thr Pro Thr Pro Ser Pro Gly Thr Ala Ser Gln Arg Ser Leu Pro
    50   55   60
Cys Arg Thr Asp Arg Arg Glu Gly Ser Gly Glu Arg Cys Met Pro Pro
65   70   75   80
Gln Ala Cys Ser Glu Gly Pro Xaa Xaa Xaa
                85   90

<210> 5177
<211> 637

<212> DNA
<213> Homo sapiens

<400> 5177
ntcctagtga gtatcgagtt ggtcttatta tcgcgtgaac tgggagcctt tgtttcctgc
60
gtgtcgcagg aagtgacgtt tcgggtacag ccgctaccag agtccctttc tcgcgaggcg
120
gaagaacccc gatcgctgag gagcaagggg gcgctaggaa agggaactgg gttgcgacgg
180
tccggcgaga gagagctggg gtgctggggt gcggggaagt tggggagcag aggccgcttg
240
gtgtccgagt agggtaagac cgcaccgacc cagtccgtta ggaaagaagg gaaacgaggc
300
aattgtcggg cggatccccg gacggagggc taaggttgtg tggaaggcgc tgctccccgg
360
atggcgaccg cagatactcc ggccccggcc tccagtggcc tctcgccgaa ggaagaaggg
420
gagcttgaag atggggaaat cagtgacgac gataataaca gccagatacg gagtcggagc
480
agcagcagca gcagcggcgg cgggctgtta ccctatccgc ggcgaaggcc tcctcactcg
540
gcccgggggcg gtggatctgg cggaggcggt ggctcttcct cgtcatcgtc ctcttctcag
600
cagcagctga ggaatttctc acgctcgcgg cacgcgt
637

<210> 5178
<211> 92
<212> PRT
<213> Homo sapiens

<400> 5178
Met Ala Thr Ala Asp Thr Pro Ala Pro Ala Ser Ser Gly Leu Ser Pro
  1   5   10   15
Lys Glu Glu Gly Glu Leu Glu Asp Gly Glu Ile Ser Asp Asp Asp Asn
          20   25   30
Asn Ser Gln Ile Arg Ser Arg Ser Ser Ser Ser Ser Gly Gly Gly
          35   40   45
Leu Leu Pro Tyr Pro Arg Arg Arg Pro Pro His Ser Ala Arg Gly Gly
      50   55   60
Gly Ser Gly Gly Gly Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Gln
65   70   75   80
Gln Gln Leu Arg Asn Phe Ser Arg Ser Arg His Ala
              85   90

<210> 5179
<211> 1527
<212> DNA
<213> Homo sapiens

<400> 5179
ggaacacagg ccatgccgcc tcctctctct tgggattacc accagtgcac ctggaactat
60

```
gaagttgagc cggatgtaaa agcagtggat gcagggtttg atgggcatga cattccttat
120
gatgccatgt ggctggacat agagcacact gagggcaaga ggtacttcac ctgggacaaa
180
aacagattcc ctaaccccaa gaggatgcaa gagctgctca ggaacaaaaa gcgtaagctt
240
gtggtcatca gtgatcccca catcaagatt gaacctgact actcagtata tgtgaaggcc
300
aaagatcagg gcttctttgt gaagaatcag gaaggggaag actttgaagg ggtgtgttgg
360
ccaggtctct cctcttacct ggatttcacc aatcccaagg tcagagagtg gtattcaagt
420
cttttttgctt tccctgttta tcagggatct acggacatcc tcttcctttg gaatgacatg
480
aatgagcctt ctgtctttag agggccagag caaaccatgc agaagaatgc cattcatcat
540
ggcaattggg agcacagaga gctccacaac atctacggtt tttatcatca aatggctact
600
gcagaaggac tgataaaacg atctaaaggg aaggagagac cctttgttct tacacgttct
660
ttctttgctg gatcacaaaa gtatggtgcc gtgtggacag cgacaacac agcagaatgg
720
agcaacttga aaatttctat cccaatgtta ctcactctca gcattactgg gatctctttt
780
tgcggagctg acataggcgg gttcattggg aatccagaga cagagctgct agtgcgttgg
840
taccaggctg gagcctacca gcccttcttc cgtggccatg ccaccatgaa caccaagcga
900
cgagagccct ggctctttgg ggaggaacac acccgactca tccgagaagc catcagagag
960
cgctatggcc tcctgccata ttggtattct ctgttctacc atgcacacgt ggcttcccaa
1020
cctgtcatga ggcctctgtg ggtagagttc cctgatgaac taaagacttt tgatatggaa
1080
gatgaataca tgctggggag tgcattattg gttcatccag tcacagaacc aaaagccacc
1140
acagttgatg tgtttcttcc aggatcaaat gaggtctggt atgactataa gacatttgct
1200
cattgggaag gagggtgtac tgtaaagatc ccagtagcct tggacactat tccagtgttt
1260
cagcgaggtg gaagtgtgat accaataaag acaactgtag gaaaatccac aggctggatg
1320
actgaatcct cctagggact ccgggttgct ctaagcacta agggttcttc agtgggtgag
1380
ttatatcttg atgatggcca ttcattccaa tacctccacc agaagcaatt tttgcacagg
1440
aagttttcat tctgttccag tgttctgatc aatagttttg ctgaccagag gggtcattat
1500
cccagcaagt gtgtggtgga aagatc
1527
```

```
<210> 5180
<211> 444
<212> PRT
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<213> Homo sapiens

<400> 5180

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Gly Thr Gln Ala Met Pro Pro Pro Leu Ser Trp Asp Tyr His Gln Cys
1               5                   10                  15
Thr Trp Asn Tyr Glu Val Glu Pro Asp Val Lys Ala Val Asp Ala Gly
            20                  25                  30
Phe Asp Gly His Asp Ile Pro Tyr Asp Ala Met Trp Leu Asp Ile Glu
        35                  40                  45
His Thr Glu Gly Lys Arg Tyr Phe Thr Trp Asp Lys Asn Arg Phe Pro
    50                  55                  60
Asn Pro Lys Arg Met Gln Glu Leu Leu Arg Asn Lys Lys Arg Lys Leu
65                  70                  75                  80
Val Val Ile Ser Asp Pro His Ile Lys Ile Glu Pro Asp Tyr Ser Val
                85                  90                  95
Tyr Val Lys Ala Lys Asp Gln Gly Phe Phe Val Lys Asn Gln Glu Gly
            100                 105                 110
Glu Asp Phe Glu Gly Val Cys Trp Pro Gly Leu Ser Ser Tyr Leu Asp
        115                 120                 125
Phe Thr Asn Pro Lys Val Arg Glu Trp Tyr Ser Ser Leu Phe Ala Phe
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Pro Val Tyr Gln Gly Ser Thr Asp Ile Leu Phe Leu Trp Asn Asp Met
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Asn Glu Pro Ser Val Phe Arg Gly Pro Glu Gln Thr Met Gln Lys Asn
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Ala Ile His His Gly Asn Trp Glu His Arg Glu Leu His Asn Ile Tyr
            180                 185                 190
Gly Phe Tyr His Gln Met Ala Thr Ala Glu Gly Leu Ile Lys Arg Ser
            195                 200                 205
Lys Gly Lys Glu Arg Pro Phe Val Leu Thr Arg Ser Phe Phe Ala Gly
    210                 215                 220
Ser Gln Lys Tyr Gly Ala Val Trp Thr Gly Asp Asn Thr Ala Glu Trp
225                 230                 235                 240
Ser Asn Leu Lys Ile Ser Ile Pro Met Leu Leu Thr Leu Ser Ile Thr
                245                 250                 255
Gly Ile Ser Phe Cys Gly Ala Asp Ile Gly Gly Phe Ile Gly Asn Pro
            260                 265                 270
Glu Thr Glu Leu Leu Val Arg Trp Tyr Gln Ala Gly Ala Tyr Gln Pro
    275                 280                 285
Phe Phe Arg Gly His Ala Thr Met Asn Thr Lys Arg Arg Glu Pro Trp
    290                 295                 300
Leu Phe Gly Glu Glu His Thr Arg Leu Ile Arg Glu Ala Ile Arg Glu
305                 310                 315                 320
Arg Tyr Gly Leu Leu Pro Tyr Trp Tyr Ser Leu Phe Tyr His Ala His
            325                 330                 335
Val Ala Ser Gln Pro Val Met Arg Pro Leu Trp Val Glu Phe Pro Asp
            340                 345                 350
Glu Leu Lys Thr Phe Asp Met Glu Asp Glu Tyr Met Leu Gly Ser Ala
    355                 360                 365
Leu Leu Val His Pro Val Thr Glu Pro Lys Ala Thr Thr Val Asp Val
    370                 375                 380
Phe Leu Pro Gly Ser Asn Glu Val Trp Tyr Asp Tyr Lys Thr Phe Ala
385                 390                 395                 400
His Trp Glu Gly Gly Cys Thr Val Lys Ile Pro Val Ala Leu Asp Thr
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                    405                  410                  415
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<210> 5181
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<212> DNA
<213> Homo sapiens

<400> 5181

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1260
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4359

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4500
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4961

<210> 5182
<211> 697
<212> PRT
<213> Homo sapiens

<400> 5182
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             20   25   30
Met Gly Ala Leu Ala Ala Ile Leu Ala Tyr Trp Phe Thr His Arg Pro
             35   40   45
Lys Ala Leu Gln Pro Pro Cys Asn Leu Leu Met Gln Ser Glu Glu Val
         50   55   60
Glu Asp Ser Gly Gly Ala Arg Arg Ser Val Ile Gly Ser Gly Pro Gln
65   70   75   80
Leu Leu Thr His Tyr Tyr Asp Asp Ala Arg Thr Met Tyr Gln Val Phe
                 85   90   95
Arg Arg Gly Leu Ser Ile Ser Gly Asn Gly Pro Cys Leu Gly Phe Arg
             100   105   110
Lys Pro Lys Gln Pro Tyr Gln Trp Leu Ser Tyr Gln Glu Val Ala Asp
         115   120   125
Arg Ala Glu Phe Leu Gly Ser Gly Leu Leu Gln His Asn Cys Lys Ala
     130   135   140
Cys Thr Asp Gln Phe Ile Gly Val Phe Ala Gln Asn Arg Pro Glu Trp
145   150   155   160
Ile Ile Val Glu Leu Ala Cys Tyr Thr Tyr Ser Met Val Val Val Pro
                 165   170   175
Leu Tyr Asp Thr Leu Gly Pro Gly Ala Ile Arg Tyr Ile Ile Asn Thr
             180   185   190
Ala Asp Ile Ser Thr Val Ile Val Asp Lys Pro Gln Lys Ala Val Leu
         195   200   205
Leu Leu Glu His Val Glu Arg Lys Glu Thr Pro Gly Leu Lys Leu Ile
     210   215   220
Ile Leu Met Asp Pro Phe Glu Glu Ala Leu Lys Glu Arg Gly Gln Lys
225   230   235   240
Cys Gly Val Val Ile Lys Ser Met Gln Ala Val Glu Asp Cys Gly Gln

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                        245                    250                    255
Glu Asn His Gln Ala Pro Val Pro Pro Gln Pro Asp Asp Leu Ser Ile
            260                    265                    270
Val Cys Phe Thr Ser Gly Thr Thr Gly Asn Pro Lys Gly Ala Met Leu
            275                    280                    285
Thr His Gly Asn Val Val Ala Asp Phe Ser Gly Phe Leu Lys Val Thr
    290                    295                    300
Glu Ser Gln Trp Ala Pro Thr Cys Ala Asp Val His Ile Ser Tyr Leu
305                    310                    315                    320
Pro Leu Ala His Met Phe Glu Arg Met Val Gln Ser Val Val Tyr Cys
                325                    330                    335
His Gly Gly Arg Val Gly Phe Phe Gln Gly Asp Ile Arg Leu Leu Ser
            340                    345                    350
Asp Asp Met Lys Ala Leu Cys Pro Thr Ile Phe Pro Val Val Pro Arg
            355                    360                    365
Leu Leu Asn Arg Met Tyr Asp Lys Ile Phe Ser Gln Ala Asn Thr Pro
    370                    375                    380
Leu Lys Arg Trp Leu Leu Glu Phe Ala Ala Lys Arg Lys Gln Ala Glu
385                    390                    395                    400
Val Arg Ser Gly Ile Ile Arg Asn Asp Ser Ile Trp Asp Glu Leu Phe
                405                    410                    415
Phe Asn Lys Ile Gln Ala Ser Leu Gly Gly Cys Val Arg Met Ile Val
            420                    425                    430
Thr Gly Ala Ala Pro Ala Ser Pro Thr Val Leu Gly Phe Leu Arg Ala
            435                    440                    445
Ala Leu Gly Cys Gln Val Tyr Glu Gly Tyr Gly Gln Thr Glu Cys Thr
    450                    455                    460
Ala Gly Cys Thr Phe Thr Thr Pro Gly Asp Trp Thr Ser Gly His Val
465                    470                    475                    480
Gly Ala Pro Leu Pro Cys Asn His Ile Lys Leu Val Asp Val Glu Glu
                485                    490                    495
Leu Asn Tyr Trp Ala Cys Lys Gly Glu Gly Glu Ile Cys Val Arg Gly
            500                    505                    510
Pro Asn Val Phe Lys Gly Tyr Leu Lys Asp Pro Asp Arg Thr Lys Glu
            515                    520                    525
Ala Leu Asp Ser Asp Gly Trp Leu His Thr Gly Asp Ile Gly Lys Trp
    530                    535                    540
Leu Pro Ala Gly Thr Leu Lys Ile Ile Asp Arg Lys Lys His Ile Phe
545                    550                    555                    560
Lys Leu Ala Gln Gly Glu Tyr Val Ala Pro Glu Lys Ile Glu Asn Ile
            565                    570                    575
Tyr Ile Arg Ser Gln Pro Val Ala Gln Ile Tyr Val His Gly Asp Ser
            580                    585                    590
Leu Lys Ala Phe Leu Val Gly Ile Val Val Pro Asp Pro Glu Val Met
    595                    600                    605
Pro Ser Trp Ala Gln Lys Arg Gly Ile Glu Gly Thr Tyr Ala Asp Leu
    610                    615                    620
Cys Thr Asn Lys Asp Leu Lys Lys Ala Ile Leu Glu Asp Met Val Arg
625                    630                    635                    640
Leu Gly Lys Glu Ser Gly Leu His Ser Phe Glu Gln Val Lys Ala Ile
                645                    650                    655
His Ile His Ser Asp Met Phe Ser Val Gln Asn Gly Leu Leu Thr Pro
                660                    665                    670
Thr Leu Lys Ala Lys Arg Pro Glu Leu Arg Glu Tyr Phe Lys Lys Gln
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          675                680                  685
Ile Glu Glu Leu Tyr Ser Ile Ser Met
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<210> 5183
<211> 2466
<212> DNA
<213> Homo sapiens


<400> 5183
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120  ,
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180
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240
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720
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780
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                                    4363

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<210> 5184
<211> 395
<212> PRT
<213> Homo sapiens

<400> 5184
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Lys Val Arg Gly Ala Ala Leu Lys Leu Gly Gln Met Leu Ser Ile Gln
            20                  25                  30
Asp Asp Ala Phe Ile Asn Pro His Leu Ala Lys Ile Phe Glu Arg Val
        35                  40                  45
Arg Gln Ser Ala Asp Phe Met Pro Leu Lys Gln Met Met Lys Thr Leu
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        50                      55                      60
Asn Asn Asp Leu Gly Pro Asn Trp Arg Asp Lys Leu Glu Tyr Phe Glu
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Glu Arg Pro Phe Ala Ala Ala Ser Ile Gly Gln Val His Leu Ala Arg
                        85                      90                      95
Met Lys Gly Gly Arg Glu Val Ala Met Lys Ile Gln Tyr Pro Gly Val
            100                     105                     110
Ala Gln Ser Ile Asn Ser Asp Val Asn Asn Leu Met Ala Val Leu Asn
        115                     120                     125
Met Ser Asn Met Leu Pro Glu Gly Leu Phe Pro Glu His Leu Ile Asp
        130                     135                     140
Val Leu Arg Arg Glu Leu Ala Leu Glu Cys Asp Tyr Gln Arg Glu Ala
145                     150                     155                     160
Ala Cys Ala Arg Lys Phe Arg Asp Leu Leu Lys Gly His Pro Phe Phe
                165                     170                     175
Tyr Val Pro Glu Ile Val Asp Glu Leu Cys Ser Pro His Val Leu Thr
                180                     185                     190
Thr Glu Leu Val Ser Gly Phe Pro Leu Asp Gln Ala Glu Gly Leu Ser
        195                     200                     205
Gln Glu Ile Arg Asn Glu Ile Cys Tyr Asn Ile Leu Val Leu Cys Leu
        210                     215                     220
Arg Glu Leu Phe Glu Phe His Phe Met Gln Thr Asp Pro Asn Trp Ser
225                     230                     235                     240
Asn Phe Phe Tyr Asp Pro Gln Gln His Lys Val Ala Leu Leu Asp Phe
                245                     250                     255
Gly Ala Thr Arg Glu Tyr Asp Arg Ser Phe Thr Asp Leu Tyr Ile Gln
            260                     265                     270
Ile Ile Arg Ala Ala Ala Asp Arg Asp Arg Glu Thr Val Arg Ala Lys
        275                     280                     285
Ser Ile Glu Met Lys Phe Leu Thr Gly Tyr Glu Val Lys Val Met Glu
        290                     295                     300
Asp Ala His Leu Asp Ala Ile Leu Ile Leu Gly Glu Ala Phe Ala Ser
305                     310                     315                     320
Asp Glu Pro Phe Asp Phe Gly Thr Gln Ser Thr Thr Glu Lys Ile His
                325                     330                     335
Asn Leu Ile Pro Val Met Leu Arg His Arg Leu Val Pro Pro Pro Glu
            340                     345                     350
Glu Thr Tyr Ser Leu His Arg Lys Met Gly Gly Ser Phe Leu Ile Cys
        355                     360                     365
Ser Lys Leu Lys Ala Arg Phe Pro Cys Lys Ala Met Phe Glu Glu Ala
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Tyr Ser Asn Tyr Cys Lys Arg Gln Ala Gln Gln
385                     390                     395
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<210> 5185
<211> 1657
<212> DNA
<213> Homo sapiens

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120

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300
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780
gagatagtcc agcttgtttc tgaacttgag gcagaaagaa gcactaacat agctgcagct
840
gccagtgagc cacactcctg agacactctc taaattgctg cactcctgta acaaacatta
900
tttttccatt tcattgtatt gtgtttgcc attgttggtc tgttgatttc cctagatgtg
960
agtctgtttg ttttcaattg tctgaacttc agcaagaaat gtgatacaac ttgggcacta
1020
aaagaagcca cagaacagga agcggtcatg aaagtgccat ggatgaacac tggaggtggc
1080
agtgcctgtt tatgaactaa ataaataaat attaaacacc taaaatatta gaatatttat
1140
tggagattta aaatcatctt attctgactt aattaccgat atccccgaag gctaggttca
1200
ttgaataata gaaaatttca ttatgattgc ttttaagaac agattcttca gctgatttag
1260
tgataagaat ccagaaaaga aaatgtacta gtgatgtatt ctctccccag atgaaattgc
1320
tgccttattc agatttactc tcttgagcca gattttgaat ttcactgcag actgcttcag
1380
acttctaatc ataggcttgt aaacctacta ataggctctg cccctcttcc caatactttt
1440
tgtcatttag agatataaac cggggcatat aaaaatgcaa cttgtattcc tttgtatatt
150.
tttccctgtc tgacttataa atcttgagac ctttattgta aaagcattta tcatcaggtg
1560
agaaatataa ataggaactg gggtcattga gcctcaggta gggaatatat caacccgatt
1620
tcttcctctc ttttcccttt tataggataa ataatcc
1657
```

<210> 5186

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<211> 243
<212> PRT
<213> Homo sapiens

<400> 5186
Met Arg Asn Ser Leu Asp Leu Val Pro Leu Arg His Met Ser Val Gln
 1               5                  10                  15
Thr Gly Asp Tyr Lys Ser Leu Lys Ile Leu Gly Leu Leu Glu Ile Ser
            20                  25                  30
Leu Ala Ile Tyr Ser Ser Leu Val Ser Gln Ile Ser Leu Cys His Pro
        35                  40                  45
Gly Trp Ser Thr Val Val Arg Ser Gln Leu Thr Ala Thr Ser Ala Ser
    50                  55                  60
Arg Phe Lys Arg Phe Ala Cys Leu Cys Leu Ser Tyr Val Pro Phe Arg
65                  70                  75                  80
Lys Ile Leu Leu Gln Glu Lys Ile Trp Phe Gln Asp Val Ser Trp Thr
                85                  90                  95
Gly Gly His Val Pro Arg Val Pro Arg Thr Gly Trp Val Tyr Arg Asn
               100                 105                 110
Val Gln Arg Pro Glu Ser Val Ser Asp His Met Tyr Arg Met Ala Val
           115                 120                 125
Met Ala Met Val Ile Lys Asp Asp Arg Leu Asn Lys Asp Xaa Glu Ala
    130                 135                 140
Met Lys Gln Ile Thr Gln Leu Leu Pro Glu Asp Leu Arg Lys Glu Leu
145                 150                 155                 160
Tyr Glu Leu Trp Glu Glu Tyr Glu Thr Gln Ser Ser Ala Glu Ala Lys
               165                 170                 175
Phe Val Lys Gln Leu Asp Gln Cys Glu Met Ile Leu Gln Ala Ser Glu
           180                 185                 190
Tyr Glu Asp Leu Glu His Lys Pro Gly Arg Leu Gln Asp Phe Tyr Asp
       195                 200                 205
Ser Thr Ala Gly Lys Phe Asn His Pro Glu Ile Val Gln Leu Val Ser
    210                 215                 220
Glu Leu Glu Ala Glu Arg Ser Thr Asn Ile Ala Ala Ala Ala Ser Glu
225                 230                 235                 240
Pro His Ser


<210> 5187
<211> 1712
<212> DNA
<213> Homo sapiens

<400> 5187
nttttgtctt gtcggctcct gtgtgtagga gggatttcgg cctgagagcg ggccgaggag
60
attggcgacg gtgtcgcccg tgttttcgtt ggcgggtgcc tgggctggtg ggaacagccg
120
cccgaaggaa gcaccatgat ttcggccgcg cagttgttgg atgagttaat gggccgggac
180
cgaaacctag ccccggacga gaagcgcagc aacgtgcggt gggaccacga gagcgtttgt
240
aaatattatc tctgtggttt ttgtcctgcg gaattgttca caaatacacg ttctgatctt
300
```

ggtccgtgtg aaaaaattca tgatgaaaat ctacgaaaac agtatgagaa gagctctcgt
360
ttcatgaaag ttggctatga gagagatttt ttgcgatact tacagagctt acttgcagaa
420
gtagaacgta ggatcagacg aggccatgct cgtttggcat tatctcaaaa ccagcagtct
480
tctggggccg ctggcccaac aggcaaaaat gaagaaaaaa ttcaggttct aacagacaaa
540
attgatgtac ttctgcaaca gattgaagaa ttagggtctg aaggaaaagt agaagaagcc
600
caggggatga tgaaattagt tgagcaatta aaagaagaga gagaactgct aaggtccaca
660
acgtcgacaa ttgaaagctt tgctgcacaa gaaaaacaaa tggaagtttg tgaagtatgt
720
ggagcctttt taatagtagg agatgcccag tcccgggtag atgaccattt gatgggaaaa
780
caacacatgg gctatgccaa aattaaagct actgtagaag aattaaaaga aaagttaagg
840
aaaagaaccg aagaacctga tcgtgatgag cgtctaaaaa aggagaagca agaaagagaa
900
gaaagagaaa agaacgggga gagagaaagg gaagaaagag aaaggaaaag acgaagggaa
960
gaggaagaaa gagaaaaaga aagggctcgt gacagagaaa gaagaaagag aagtcgttca
1020
cgaagtagac actcaagccg aacatcagac agaagatgca gcaggtctcg ggaccacaaa
1080
aggtcacgaa gtagagaaag aaggcggagc agaagtagag atcgacgaag aagcagaagc
1140
catgatcgat cagaaagaaa acacagatct cgaagtcggg atcgaagaag atcaaaaagc
1200
cgggatcgaa agtcatataa gcacaggagc aaaagtcggg acagagaaca agatagaaaa
1260
tccaaggaga aagaaaagag gggatctgat gataaaaaaa gtagtgtgaa gtccggtagt
1320
cgagaaaagc agagtgaaga cacaaacact gaatcgaagg aaagtgatac taagaatgag
1380
gtcaatggga ccagtgaaga cattaaatct gaagtgcagc gtaagtatgc acagatgaag
1440
atggaactaa gccgagtaag aagacataca aaagcctctt ctgaaggaaa agacagtgta
1500
gtcctgcaaa acattttgag gtacattgtt ttgtctcagc tattttgtag cagactcgtg
1560
cccccattag tgtgcctctt tggaaattat cgcccacatt tgtaatatag tcgccattga
1620
aaagttaatt atcctttttt tagggatttt gatgtcgttt cttttttttt ttaatacaaa
1680
ggttgaactg tttttttttt ccttttttgg tt
1712

<210> 5188
<211> 489
<212> PRT
<213> Homo sapiens

```
<400> 5188
Met Ile Ser Ala Ala Gln Leu Leu Asp Glu Leu Met Gly Arg Asp Arg
1               5                   10                  15
Asn Leu Ala Pro Asp Glu Lys Arg Ser Asn Val Arg Trp Asp His Glu
            20                  25                  30
Ser Val Cys Lys Tyr Tyr Leu Cys Gly Phe Cys Pro Ala Glu Leu Phe
        35                  40                  45
Thr Asn Thr Arg Ser Asp Leu Gly Pro Cys Glu Lys Ile His Asp Glu
    50                  55                  60
Asn Leu Arg Lys Gln Tyr Glu Lys Ser Ser Arg Phe Met Lys Val Gly
65                  70                  75                  80
Tyr Glu Arg Asp Phe Leu Arg Tyr Leu Gln Ser Leu Leu Ala Glu Val
                85                  90                  95
Glu Arg Arg Ile Arg Arg Gly His Ala Arg Leu Ala Leu Ser Gln Asn
            100                 105                 110
Gln Gln Ser Ser Gly Ala Ala Gly Pro Thr Gly Lys Asn Glu Glu Lys
        115                 120                 125
Ile Gln Val Leu Thr Asp Lys Ile Asp Val Leu Leu Gln Gln Ile Glu
    130                 135                 140
Glu Leu Gly Ser Glu Gly Lys Val Glu Glu Ala Gln Gly Met Met Lys
145                 150                 155                 160
Leu Val Glu Gln Leu Lys Glu Glu Arg Glu Leu Leu Arg Ser Thr Thr
                165                 170                 175
Ser Thr Ile Glu Ser Phe Ala Ala Gln Glu Lys Gln Met Glu Val Cys
            180                 185                 190
Glu Val Cys Gly Ala Phe Leu Ile Val Gly Asp Ala Gln Ser Arg Val
        195                 200                 205
Asp Asp His Leu Met Gly Lys Gln His Met Gly Tyr Ala Lys Ile Lys
    210                 215                 220
Ala Thr Val Glu Glu Leu Lys Glu Lys Leu Arg Lys Arg Thr Glu Glu
225                 230                 235                 240
Pro Asp Arg Asp Glu Arg Leu Lys Lys Glu Lys Gln Glu Arg Glu Glu
                245                 250                 255
Arg Glu Lys Glu Arg Glu Arg Glu Arg Glu Glu Arg Glu Arg Lys Arg
            260                 265                 270
Arg Arg Glu Glu Glu Glu Arg Glu Lys Glu Arg Ala Arg Asp Arg Glu
        275                 280                 285
Arg Arg Lys Arg Ser Arg Ser Arg Ser Arg His Ser Ser Arg Thr Ser
    290                 295                 300
Asp Arg Arg Cys Ser Arg Ser Arg Asp His Lys Arg Ser Arg Ser Arg
305                 310                 315                 320
Glu Arg Arg Arg Ser Arg Ser Arg Asp Arg Arg Arg Ser Arg Ser His
            325                 330                 335
Asp Arg Ser Glu Arg Lys His Arg Ser Arg Ser Arg Asp Arg Arg Arg
        340                 345                 350
Ser Lys Ser Arg Asp Arg Lys Ser Tyr Lys His Arg Ser Lys Ser Arg
    355                 360                 365
Asp Arg Glu Gln Asp Arg Lys Ser Lys Glu Lys Glu Lys Arg Gly Ser
    370                 375                 380
Asp Asp Lys Lys Ser Ser Val Lys Ser Gly Ser Arg Glu Lys Gln Ser
385                 390                 395                 400
Glu Asp Thr Asn Thr Glu Ser Lys Glu Ser Asp Thr Lys Asn Glu Val
                405                 410                 415
Asn Gly Thr Ser Glu Asp Ile Lys Ser Glu Val Gln Arg Lys Tyr Ala
```

```
                    420                    425                    430
Gln Met Lys Met Glu Leu Ser Arg Val Arg Arg His Thr Lys Ala Ser
          435                    440                    445
Ser Glu Gly Lys Asp Ser Val Val Leu Gln Asn Ile Leu Arg Tyr Ile
      450                    455                    460
Val Leu Ser Gln Leu Phe Cys Ser Arg Leu Val Pro Pro Leu Val Cys
465                    470                    475                    480
Leu Phe Gly Asn Tyr Arg Pro His Leu
                485
```

<210> 5189
<211> 323
<212> DNA
<213> Homo sapiens

<400> 5189
acgcgtgaag ggattacagg catgagccac tgcacctggc caggagaaat tgttttttata
60
acgtatgaca aatgcttgag taattcctgg cttgaaagtg ggctcacaat aaataactgg
120
aatccaaaaa taacaaaatg tttagcaatt caggtaatgt caagcagtat tcaaacacat
180
gaagttaatc attccttaat tcctgtttat ttatatttca tttttgcttt cttttttactc
240
catgtgttat tcctacagaa gtcacaagtt aaatgttttt ggggaacttt gggggggggg
300
gacaaacatc catgtgctgc taa
323

<210> 5190
<211> 100
<212> PRT
<213> Homo sapiens

<400> 5190
```
Met Ser His Cys Thr Trp Pro Gly Glu Ile Val Phe Ile Thr Tyr Asp
1                   5                   10                  15
Lys Cys Leu Ser Asn Ser Trp Leu Glu Ser Gly Leu Thr Ile Asn Asn
            20                  25                  30
Trp Asn Pro Lys Ile Thr Lys Cys Leu Ala Ile Gln Val Met Ser Ser
        35                  40                  45
Ser Ile Gln Thr His Glu Val Asn His Ser Leu Ile Pro Val Tyr Leu
    50                  55                  60
Tyr Phe Ile Phe Ala Phe Phe Leu Leu His Val Leu Phe Leu Gln Lys
65                  70                  75                  80
Ser Gln Val Lys Cys Phe Trp Gly Thr Leu Gly Gly Gly Asp Lys His
                85                  90                  95
Pro Cys Ala Ala
            100
```

<210> 5191
<211> 1632
<212> DNA
<213> Homo sapiens

<400> 5191
tcccgcattt tagaggtgac tggagaactc tcacgtaggc ggccgcccca atttcccgcc
60
cgggtcatcg gggagccccт tcccaagccc cgcaaacacc tgcatgcaaa gaggcaggct
120
tccttctgac agcagataac atgtcgcctg cggcgtcagc aagaggcgca tgcgccttgc
180
cgtgggaggc cgggtgcgca ggactggaac gcggttcctc cttcttcccc gccccgcccc
240
gcttccggcg gaagcggcct caacaaggga aactttattg ttcccgtggg gcagtcgagg
300
atgtcggtga attacgcggc ggggctgtcg ccgtacgcgg acaagggcaa gtgcggcctc
360
ccggagatct tcgacccccc ggaggagctg gagcggaagg tgtgggaact ggcgaggctg
420
gtctggcagt cttccagtgt ggtgttccac acgggtgccg gcatcagcac tgcctctggc
480
atccccgact tcaggggtcc ccacggagtc tggaccatgg aggagcgagg tctggccccc
540
aagttcgaca ccacctttga gagcgcgcgg cccacgcaga cccacatggc gctggtgcag
600
ctggagcgcg tgggcctcct ccgcttcctg gtcagccaga cgtggacgg gctccatgtg
660
cgctcaggct cccccaggga caaactggca gagctccacg ggaacatgtt tgtggaagaa
720
tgtgccaagt gtaagacgca gtacgtccga gacacagtcg tgggcaccat gggcctgaag
780
gccacgggcc ggctctgcac cgtggctaag gcaaggggc tgcgagcctg caggggaggc
840
tgcgaggccc ctgaggactc tcctcagctt cctcattgca ggggagagct gagggacacc
900
atcctagact gggaggactc cctgcccgac cgggacctgg cactcgccga tgaggccagc
960
aggaacgccg acctgtccat cacgctgggt acatcgctgc agatccggcc cagcgggaac
1020
ctgccgctgg ctaccaagcg ccggggaggc cgcctggtca tcgtcaacct gcagcccacc
1080
aagcacgacc gccatgctga cctccgcatc catggctacg ttgacgaggt catgacccgg
1140
ctcatgaagc acctggggct ggagatcccc gcctgggacg gccccgtgt gctggagagg
1200
gcgctgccac ccctgccccg cccgcccacc cccaagctgg agcccaagga ggaatctccc
1260
acccggatca acggctctat ccccgccˉgc cccaagcagg agccctgcgc ccagcacaac
1320
ggctcagagc ccgccagccc caaacgggag cggcccacca gccctgcccc ccacagaccc
1380
cccaaaaggg ggcctctggt gcggttccgg gaagaagcca caccccagag gtgacagctg
1440
agccctgccc acaccccagc ctctgacttg ctgtgttgtc cagaggtgag gctgggccct
1500
ccctggtctc cagcttaaac aggagtgaac tccctctgtc cccagggcct cccttctggg
1560

cccccctacag cccaccctac ccctcctcca tgggccctgc aggaggggag acccaccttg
1620
aagtgggggga tc
1632

<210> 5192
<211> 377
<212> PRT
<213> Homo sapiens

<400> 5192
Met Ser Val Asn Tyr Ala Ala Gly Leu Ser Pro Tyr Ala Asp Lys Gly
1   5   10   15
Lys Cys Gly Leu Pro Glu Ile Phe Asp Pro Pro Glu Glu Leu Glu Arg
            20   25   30
Lys Val Trp Glu Leu Ala Arg Leu Val Trp Gln Ser Ser Ser Val Val
            35   40   45
Phe His Thr Gly Ala Gly Ile Ser Thr Ala Ser Gly Ile Pro Asp Phe
    50   55   60
Arg Gly Pro His Gly Val Trp Thr Met Glu Glu Arg Gly Leu Ala Pro
65   70   75   80
Lys Phe Asp Thr Thr Phe Glu Ser Ala Arg Pro Thr Gln Thr His Met
                85   90   95
Ala Leu Val Gln Leu Glu Arg Val Gly Leu Leu Arg Phe Leu Val Ser
            100   105   110
Gln Asn Val Asp Gly Leu His Val Arg Ser Gly Phe Pro Arg Asp Lys
        115   120   125
Leu Ala Glu Leu His Gly Asn Met Phe Val Glu Glu Cys Ala Lys Cys
    130   135   140
Lys Thr Gln Tyr Val Arg Asp Thr Val Val Gly Thr Met Gly Leu Lys
145   150   155   160
Ala Thr Gly Arg Leu Cys Thr Val Ala Lys Ala Arg Gly Leu Arg Ala
                165   170   175
Cys Arg Gly Gly Cys Glu Ala Pro Glu Asp Ser Pro Gln Leu Pro His
            180   185   190
Cys Arg Gly Glu Leu Arg Asp Thr Ile Leu Asp Trp Glu Asp Ser Leu
        195   200   205
Pro Asp Arg Asp Leu Ala Leu Ala Asp Glu Ala Ser Arg Asn Ala Asp
    210   215   220
Leu Ser Ile Thr Leu Gly Thr Ser Leu Gln Ile Arg Pro Ser Gly Asn
225   230   235   240
Leu Pro Leu Ala Thr Lys Arg Arg Gly Gly Arg Leu Val Ile Val Asn
                245   250   255
Leu Gln Pro Thr Lys His Asp Arg His Ala Asp Leu Arg Ile His Gly
            260   265   270
Tyr Val Asp Glu Val Met Thr Arg Leu Met Lys His Leu Gly Leu Glu
        275   280   285
Ile Pro Ala Trp Asp Gly Pro Arg Val Leu Glu Arg Ala Leu Pro Pro
    290   295   300
Leu Pro Arg Pro Pro Thr Pro Lys Leu Glu Pro Lys Glu Glu Ser Pro
305   310   315   320
Thr Arg Ile Asn Gly Ser Ile Pro Ala Gly Pro Lys Gln Glu Pro Cys
                325   330   335
Ala Gln His Asn Gly Ser Glu Pro Ala Ser Pro Lys Arg Glu Arg Pro

```
                  340                 345                 350
Thr Ser Pro Ala Pro His Arg Pro Pro Lys Arg Gly Pro Leu Val Arg
            355                 360                 365
Phe Arg Glu Glu Ala Thr Pro Gln Arg
        370                 375
```

<210> 5193
<211> 554
<212> DNA
<213> Homo sapiens

<400> 5193

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acgcgtccct tcccgaggtt ccaggcggac gtgtcccttc ccgaggttct aggcggacat
60
gtcttttgag agggcctcag gttaacccac tactgtgtct gaatctgtcc cttccccaag
120
cagcagctct gtgtcccggc atggccactg tggggcagag acacagcagg tcccacatct
180
ctgtgccctg cagacccgtc agccctgggg atgctggtct gggacggacc cctagatatc
240
acacagccga gaggtaggtc agcgctttaa gatgctgata ccgctggttc agctcctgga
300
gcagaattct cagggtggat ttccagcaac gcctcctggg agggtcagca ggggctgggg
360
tccgtggggt ggtctccggg aggtttgcct gtgtcaggcc tgtgctgctt ctggcggagg
420
cgcttgtcca gcctcatcca gctggtgtc tccggtgcca cgcgctaaca ccttcagtgc
480
acgctcggga acgcgcctgg aaggccctgc cctgccccgc cccaggctcc agccagatgc
540
tgccagcacc cggg
554
```

<210> 5194
<211> 94
<212> PRT
<213> Homo sapiens

<400> 5194

```
Met Leu Ile Pro Leu Val Gln Leu Leu Glu Gln Asn Ser Gln Gly Gly
1               5                   10                  15
Phe Pro Ala Thr Pro Pro Gly Arg Val Ser Arg Gly Trp Gly Pro Trp
            20                  25                  30
Gly Gly Leu Arg Glu Val Cys Leu Cys Gln Ala Cys Ala Ala Ser Gly
        35                  40                  45
Gly Gly Ala Cys Pro Ala Ser Ser Ser Leu Val Ser Pro Val Pro Arg
    50                  55                  60
Ala Asn Thr Phe Ser Ala Arg Ser Gly Thr Arg Leu Glu Gly Pro Ala
65                  70                  75                  80
Leu Pro Arg Pro Arg Leu Gln Pro Asp Ala Ala Ser Thr Arg
                85                  90
```

<210> 5195
<211> 964

<212> DNA
<213> Homo sapiens

<400> 5195
gggcccaggc tcacagaggt gtgaaagagg caagcacacc gcaggggcct ctgagcccag
60
ccagcctcgc ttcaatgctg ggaggctgac gtcttccttt ttgtcttctg cccaggccag
120
ctgcgggccg tccagcggct gtgccacttc tacagcgccg tcatgcccag cgaggcccag
180
tgtgtcatct accatgagct ccagctctcc ctggcctgca aggtggccga caaggtgctg
240
gaggggcagc tcctggagac catcagccag ctctacctgt ccctgggcac cgagcgggcc
300
tacaaatccg cactggacta caccaaacga agtctgggga ttttcattga cctccagaag
360
aaagagaagg aggcgcatgc ctggctgcaa gcaggaagatct attacat cttgcggcag
420
agcgagctgg tggacctcta catccaggtg gcacagaacg tggccctgta cacaggcgac
480
cccaacctgg ggctggagct gtttgaggcg gctggagaca tcttcttcga cggggcctgg
540
gagcgggaga aagctgtgtc cttctaccgg gaccgggccc tgcccctggc agtgactacg
600
ggcaaccgca aggcggagct gcggctgtgc aacaagctgg tggcactgct ggccacgctg
660
gaggagcccc aggagggctt ggagtttgcc cacatggccc tagcactcag catcactctg
720
ggggaccggc tgaacgagcg cgtggcctac caccggctgg ccgccctgca acaccgactg
780
ggccatggcg agctggcaga gcacttctac ctcaaggccc tgtcgctctg caactcgccg
840
ctggagtttg acgaggagac cctctactac gtgaaggtgt acctggtgct cggtgacatc
900
atcttctacg acctgaagga cccgtttgat gcagccgggt actaccagct ggcgctggcg
960
gccg
964

<210> 5196
<211> 267
<212> PRT
<213> Homo sapiens

<400> 5196
Met Pro Ser Glu Ala Gln Cys Val Ile Tyr His Glu Leu Gln Leu Ser
1   5   10   15
Leu Ala Cys Lys Val Ala Asp Lys Val Leu Glu Gly Gln Leu Leu Glu
            20   25   30
Thr Ile Ser Gln Leu Tyr Leu Ser Leu Gly Thr Glu Arg Ala Tyr Lys
        35   40   45
Ser Ala Leu Asp Tyr Thr Lys Arg Ser Leu Gly Ile Phe Ile Asp Leu
    50   55   60
Gln Lys Lys Glu Lys Glu Ala His Ala Trp Leu Gln Ala Gly Lys Ile

```
65                      70                      75                      80
Tyr Tyr Ile Leu Arg Gln Ser Glu Leu Val Asp Leu Tyr Ile Gln Val
                85                      90                      95
Ala Gln Asn Val Ala Leu Tyr Thr Gly Asp Pro Asn Leu Gly Leu Glu
            100                     105                     110
Leu Phe Glu Ala Ala Gly Asp Ile Phe Phe Asp Gly Ala Trp Glu Arg
        115                     120                     125
Glu Lys Ala Val Ser Phe Tyr Arg Asp Arg Ala Leu Pro Leu Ala Val
    130                     135                     140
Thr Thr Gly Asn Arg Lys Ala Glu Leu Arg Leu Cys Asn Lys Leu Val
145                     150                     155                     160
Ala Leu Leu Ala Thr Leu Glu Glu Pro Gln Glu Gly Leu Glu Phe Ala
                165                     170                     175
His Met Ala Leu Ala Leu Ser Ile Thr Leu Gly Asp Arg Leu Asn Glu
            180                     185                     190
Arg Val Ala Tyr His Arg Leu Ala Ala Leu Gln His Arg Leu Gly His
        195                     200                     205
Gly Glu Leu Ala Glu His Phe Tyr Leu Lys Ala Leu Ser Leu Cys Asn
    210                     215                     220
Ser Pro Leu Glu Phe Asp Glu Glu Thr Leu Tyr Tyr Val Lys Val Tyr
225                     230                     235                     240
Leu Val Leu Gly Asp Ile Ile Phe Tyr Asp Leu Lys Asp Pro Phe Asp
                245                     250                     255
Ala Ala Gly Tyr Tyr Gln Leu Ala Leu Ala Ala
            260                     265


<210> 5197
<211> 1045
<212> DNA
<213> Homo sapiens

<400> 5197
natgttggtc aggctggtct caaactcctg acctcgtgat ccgcccacct cagcctcgca
60
aagtgctggg attacaggcg tgagccacca tgttggtcag tctggtctca nactcctgtc
120
ctcatgatcc gcccacctca gcctcgcaaa gtgctgggat tacaggcatg agccaccacg
180
tccggccacc actgactttt tcattctttc tcattcttcc tgggccctcc tgctgttgta
240
ggcccccatg aagaagtgga ctattctgag aaactgaagt tcagtgatga tgaagaggag
300
gaagaagttg tgaaggacgg caggccaaag tggaacagtt gggaccctag gaggcagcgg
360
cagttgtcaa tgagctctgc agacagtgcg gacgctaagc ggactcgaga ggaagggaag
420
gactgggctg aagcagtggg tgcgtcccgt gtggtccgaa aggcgccaga ccctcagcca
480
ccgcccagga agcttcatgg ctgggcacca ggccctgact accagaagtc atcaatgggc
540
agcatgttcc ggcaacagtc catcgaggac aaggaggaca gcccccacc aaggcagaag
600
ttcattcagt cagagatgtc cgaggcggtg gagcgagccc gaaagcgccg ggaagaagag
660
```

gagcgccgag cccgggagga gaggctggcc gcctgtgctg ccaaactcaa gcagctggac
720
cagaagtgta agcaggcacg aaaggcaggt gaggcccgga agcaggcaga gaaggaagtg
780
ccctggtctc caagtgctga gaaggcatct ccccaggaaa acggccctgc tgtccacaaa
840
ggctccccag aattccctgc ccaagagacc cccaccacat tcccagaaga ggcacccaca
900
gtgtccccag cagtggcaca gagcaacagc agtgaggaag aggccagaga ggctgggtcc
960
cctgcacagg agttcaagta tcagaagtcc cttcctcccc gattccagcg ccagcagcag
1020
caacaacagc aggagcagct gtaca
1045

<210> 5198
<211> 283
<212> PRT
<213> Homo sapiens

<400> 5198
Leu Phe His Ser Phe Ser Phe Phe Leu Gly Pro Pro Ala Val Val Gly
1   5   10   15
Pro His Glu Glu Val Asp Tyr Ser Glu Lys Leu Lys Phe Ser Asp Asp
            20   25   30
Glu Glu Glu Glu Glu Val Val Lys Asp Gly Arg Pro Lys Trp Asn Ser
        35   40   45
Trp Asp Pro Arg Arg Gln Arg Gln Leu Ser Met Ser Ser Ala Asp Ser
        50   55   60
Ala Asp Ala Lys Arg Thr Arg Glu Glu Gly Lys Asp Trp Ala Glu Ala
65   70   75   80
Val Gly Ala Ser Arg Val Val Arg Lys Ala Pro Asp Pro Gln Pro Pro
                85   90   95
Pro Arg Lys Leu His Gly Trp Ala Pro Gly Pro Asp Tyr Gln Lys Ser
            100   105   110
Ser Met Gly Ser Met Phe Arg Gln Gln Ser Ile Glu Asp Lys Glu Asp
            115   120   125
Lys Pro Pro Pro Arg Gln Lys Phe Ile Gln Ser Glu Met Ser Glu Ala
        130   135   140
Val Glu Arg Ala Arg Lys Arg Arg Glu Glu Glu Glu Arg Arg Ala Arg
145   150   155   160
Glu Glu Arg Leu Ala Ala Cys Ala Ala Lys Leu Lys Gln Leu Asp Gln
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Lys Cys Lys Gln Ala Arg Lys Ala Gly Glu Ala Arg Lys Gln Ala Glu
            180   185   190
Lys Glu Val Pro Trp Ser Pro Ser Ala Glu Lys Ala Ser Pro Gln Glu
            195   200   205
Asn Gly Pro Ala Val His Lys Gly Ser Pro Glu Phe Pro Ala Gln Glu
        210   215   220
Thr Pro Thr Thr Phe Pro Glu Glu Ala Pro Thr Val Ser Pro Ala Val
225   230   235   240
Ala Gln Ser Asn Ser Ser Glu Glu Glu Ala Arg Glu Ala Gly Ser Pro
                245   250   255
Ala Gln Glu Phe Lys Tyr Gln Lys Ser Leu Pro Pro Arg Phe Gln Arg

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Gln Gln Gln Gln Gln Gln Gln Glu Gln Leu Tyr
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<210> 5199
<211> 1332
<212> DNA
<213> Homo sapiens
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1332

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            35   40   45
Gln Gly Ala Asp Asp Val Thr Ser Val Leu Phe Ser Pro Ser Cys Pro
        50   55   60
Thr Lys Leu Tyr Ala Ser His Gly Glu Thr Ile Ser Val Leu Asp Val
65   70   75   80
Arg Ser Leu Lys Asp Ser Leu Asp His Phe His Val Asn Glu Glu Glu
                85   90   95
Ile Asn Cys Leu Ser Leu Asn Gln Thr Glu Asn Leu Leu Ala Ser Ala
            100   105   110
Asp Asp Ser Gly Ala Ile Lys Ile Leu Asp Leu Glu Asn Lys Lys Val
        115   120   125
Ile Arg Ser Leu Lys Arg His Ser Asn Ile Cys Ser Ser Val Ala Phe
    130   135   140
Arg Pro Gln Arg Pro Gln Ser Leu Val Ser Cys Gly Leu Asp Met Gln
145   150   155   160
Val Met Leu Trp Ser Leu Gln Lys Ala Arg Pro Leu Trp Ile Thr Asn
                165   170   175
Leu Gln Glu Asp Glu Thr Glu Glu Met Glu Gly Pro Gln Ser Pro Gly
            180   185   190
Gln Leu Leu Asn Pro Ala Leu Ala His Ser Ile Ser Val Ala Ser Cys
        195   200   205
Gly Asn Ile Phe Ser Cys Gly Ala Glu Asp Gly Lys Val Arg Ile Phe
    210   215   220
Arg Val Met Gly Val Lys Cys Glu Gln Glu Leu Gly Phe Lys Gly His
225   230   235   240
Thr Ser Gly Val Ser Gln Val Cys Phe Leu Pro Glu Ser Tyr Leu Leu
                245   250   255
Leu Thr Gly Gly Asn Asp Gly Lys Ile Thr Leu Trp Asp Ala Asn Ser
            260   265   270
Glu Val Glu Lys Lys Gln Lys Ser Pro Thr Lys Arg Thr His Arg Lys
        275   280   285
Lys Pro Lys Arg Gly Thr Cys Thr Lys Gln Gly Gly Asn Thr Asn Ala
        290   295   300
Ser Val Thr Asp Glu Glu Glu His Gly Asn Ile Leu Pro Lys Leu Asn
305   310   315   320
Ile Glu His Gly Glu Lys Val Asn Trp Leu Leu Gly Thr Lys Ile Lys
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Tyr Pro Leu Asn Glu Phe

355

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<213> Homo sapiens

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1320
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1380

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4381

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<211> 108
<212> PRT
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<213> Homo sapiens

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            20   25   30
Ser Gln Gly Ser Leu Glu Arg Gly Leu Ala Gly Leu Gly Gly His Arg
         35   40   45
Pro His Ser Gly Leu Pro Ala Gln Gly Arg Arg Pro Glu Pro Val Trp
      50   55   60
Pro Cys Ser Pro Gly Gln Ser Trp Ala Cys Arg Val Phe Leu Pro Gly
65   70   75   80
Arg Cys Arg Cys Trp Pro Ser Ala Gly Gly Arg Arg Trp Glu Ser Trp
            85   90   95
Ile Phe Cys Phe Phe Leu Ser Phe Phe Phe Leu Arg
            100   105

<210> 5203
<211> 1863
<212> DNA
<213> Homo sapiens

<400> 5203
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120
cttcaggcaa cagctgaagc taataatctt gctgcagtag caggagcaag agatacctat
180
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1680
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1863

<210> 5204
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Glu Leu Pro His Pro Lys Ser Met Leu Gln Ala Thr Ala Glu Ala Asn
        35   40   45
Asn Leu Ala Ala Val Ala Gly Ala Arg Asp Thr Tyr Cys Lys Ser Met
    50   55   60
Glu Gln Val Cys Gly Gly Asp Lys Pro Tyr Ile Ala Pro Ser Asp Leu
65   70   75   80
Glu Arg Lys His Leu Asp Leu Lys Glu Val Ala Ile Lys Gln Phe Arg
                85   90   95
Ser Val Lys Lys Met Gly Gly Asp Glu Phe Cys Arg Arg Tyr Gln Asp

4384

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    Asn Asp Gly Lys Asn Ile Phe Tyr Ala Ala Arg Thr Pro Ala Thr Leu
          130                    135                    140
    Phe Ala Val Met Phe Ala Met Tyr Ile Ile Ser Gly Leu Thr Gly Phe
    145                    150                    155                    160
    Ile Gly Leu Asn Ser Ile Ala Val Leu Cys Asn Leu Val Met Gly Leu
                  165                    170                    175
    Ala Leu Ile Phe Leu Cys Thr Trp Ala Tyr Val Lys Tyr Ser Gly Glu
                  180                    185                    190
    Phe Arg Glu Ile Gly Thr Val Ile Asp Gln Ile Ala Glu Thr Leu Trp
              195                    200                    205
    Glu Gln Val Leu Lys Pro Leu Gly Asp Asn Leu Met Glu Glu Asn Ile
              210                    215                    220
    Arg Gln Ser Val Thr Asn Ser Ile Lys Ala Gly Leu Thr Asp Gln Val
    225                    230                    235                    240
    Ser His His Ala Arg Leu Lys Thr Asp
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ggtctgcctc aggtacagaa gggcgacctc tgtgccattt ctttggtggg gaacagagcc
540
cctgtagcca ttggagttgc agccatgtcc acagctgaga tgctcacgtc aggcctgaag
600
ggaaggggct tctctgtgct ccacacttac caggaccact gtggcggtc tggaaacaag
660
tcctctccac cttccattgc tccactggcc ctggattcag cagatctcag tgaagagaag
720
gggtctgtcc agatggactc caccctgcag ggagacatga ggcacatgac cctggagggg
780
gaagaggaga atggggaggt tcaccagggc acgtgaagac aatctctctc agaagcccca
840
```

gaagacacca gcaccagggg cctgaaccaa gactccacag atagcaaaac gcttcaagaa
900
caaatggatg agctgttaca gcaatgcttc ttacatgcct tgaagtgccg agtcaaaaag
960
gctgacctcc ctttactcac cagcactttc cttggcagcc acatgttctc ctgctgcccc
1020
gaangacgac aactggacat aaagaagtca agctacaaaa agctctctaa gttcctgcag
1080
caaatgcagc aggagcagat tatacaggtg aaggagctga gcaaaggggt ggagagcatt
1140
gtggctgtgg actggaaaca cccgaggatt acatctttcg tcatacccga gccctccccg
1200
acctcccaga ctatccagga gggtagcagg gaacagccct atcaccctcc agatataaaa
1260
cccctctact gtgtcccagc cagcatgacc ctgctcttcc aggagtctgg ccacaagaag
1320
gggagctttc tggagggcag tgaggtccga acgatcgtca ttaactacgc caagaaaaat
1380
gacctggttg atgcagacaa caaaaatctt gtgagattgg atcccatcct atgtgactgc
1440
atcttagaga aaaatgaaca gcatacagtc atgaagcttc catgggacag tcttctgacc
1500
aggtgtttgg aaaaattaca gcctgcctat caagtgaccc ttcccggaca agagcccatt
1560
gtgaagaaag ggagaatctg tccaattgac atcaccctag cacaagagc gtctaataaa
1620
aaggtgaccg tggtccggaa cttggaggcc tatggtctgg acccatactc agtggctgcc
1680
atccttcagc agcgatgcca ggctagcacc accgtcaatc ctgcccctgg ggccaaggac
1740
agccttcagg tgcagatcca gggaaaccag gtccaccacc tcggctggct attgcttgaa
1800
gagtatcagc tccctcgaaa acacatccaa ggtctagaaa aggccctcaa acctggcaag
1860
aagaagtgac agactctttt gtctcacgtg gtggatccgg tggaaatcca agctctgggc
1920
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1980
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2011

<210> 5206
<211> 248
<212> PRT
<213> Homo sapiens

<400> 5206
His Ser Leu Ala Ser Val Leu Ser Ser Pro Gly His Pro Ser Arg His
1   5   10   15
Val Ala Lys Ala Phe Arg Val Lys Ser Asn Thr Ala Ile Lys Gly Ser
            20   25   30
Asp Arg Arg Lys Leu Arg Ala Asp Val Thr Thr Ala Phe Pro Thr Leu
        35   40   45
Gly Thr Asp Gln Val Ser Glu Leu Val Pro Gly Lys Glu Glu Leu Asn

```
       50                      55                      60
Ile Val Lys Leu Tyr Ala His Lys Gly Asp Ala Val Thr Val Tyr Val
65                      70                      75                      80
Ser Gly Gly Asn Pro Ile Leu Phe Glu Leu Glu Lys Asn Leu Tyr Pro
                    85                      90                      95
Thr Val Tyr Thr Leu Trp Ser Tyr Pro Asp Leu Leu Pro Thr Phe Thr
                100                     105                     110
Thr Trp Pro Leu Val Leu Glu Lys Leu Val Gly Gly Ala Asp Leu Met
            115                     120                     125
Leu Pro Gly Leu Val Met Pro Pro Ala Gly Leu Pro Gln Val Gln Lys
        130                     135                     140
Gly Asp Leu Cys Ala Ile Ser Leu Val Gly Asn Arg Ala Pro Val Ala
145                     150                     155                     160
Ile Gly Val Ala Ala Met Ser Thr Ala Glu Met Leu Thr Ser Gly Leu
                165                     170                     175
Lys Gly Arg Gly Phe Ser Val Leu His Thr Tyr Gln Asp His Leu Trp
                180                     185                     190
Arg Ser Gly Asn Lys Ser Ser Pro Pro Ser Ile Ala Pro Leu Ala Leu
            195                     200                     205
Asp Ser Ala Asp Leu Ser Glu Glu Lys Gly Ser Val Gln Met Asp Ser
        210                     215                     220
Thr Leu Gln Gly Asp Met Arg His Met Thr Leu Glu Gly Glu Glu Glu
225                     230                     235                     240
Asn Gly Glu Val His Gln Gly Thr
                    245
```

```
<210> 5207
<211> 594
<212> DNA
<213> Homo sapiens
```

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<400> 5207
ncggccggcc aggggaggggg gcacctagga cggccccggt ccaggtggag gccgcagagg
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gcccagggca agcagaggca gcaatggttg gtcctgacgg tggctgagcc cccagcccct
120
ggaatatgca gcccggggga gccccagaca gcggcaagga cgaggtggcg gagtggggcg
180
ggaggcatgg tctccaccta ccgggtggcc gtgctggggg cgcgaggtgt gggcaagagt
240
gccatcgtgc gccagttctt gtacaacgag ttcagcgagg tctgcgtccc caccaccgcc
300
cgccgccttt acctgcctgc tgtcgtcatg aacggccacg tgcacgacct ccagatcctc
360
gactttccac ccatcagcgc cttcccrgtc aatacgctcc aggagtgggc agacacctgc
420
tgcaggggac tccggagtgt ccacgcctac atcctggtct acgacatctg ctgctttgac
480
agctttgagt acgtcaagac catccgccag cagatcctgg agacgagggt gatcggaacc
540
tcagagacgc ccatcatcat cgtgggcaac aagcgggacc tgcagcgcgg acgc
594
```

```
<210> 5208
```

<211> 136
<212> PRT
<213> Homo sapiens

<400> 5208
Met Val Ser Thr Tyr Arg Val Ala Val Leu Gly Ala Arg Gly Val Gly
1   5   10   15
Lys Ser Ala Ile Val Arg Gln Phe Leu Tyr Asn Glu Phe Ser Glu Val
                20   25   30
Cys Val Pro Thr Thr Ala Arg Arg Leu Tyr Leu Pro Ala Val Val Met
            35   40   45
Asn Gly His Val His Asp Leu Gln Ile Leu Asp Phe Pro Pro Ile Ser
        50   55   60
Ala Phe Pro Val Asn Thr Leu Gln Glu Trp Ala Asp Thr Cys Cys Arg
65   70   75   80
Gly Leu Arg Ser Val His Ala Tyr Ile Leu Val Tyr Asp Ile Cys Cys
                85   90   95
Phe Asp Ser Phe Glu Tyr Val Lys Thr Ile Arg Gln Gln Ile Leu Glu
            100   105   110
Thr Arg Val Ile Gly Thr Ser Glu Thr Pro Ile Ile Ile Val Gly Asn
        115   120   125
Lys Arg Asp Leu Gln Arg Gly Arg
    130   135

<210> 5209
<211> 1592
<212> DNA
<213> Homo sapiens

<400> 5209
atcctgtggg gcctgaagct tgtcatcttc ctggccggct tcgtggccct gatgaggtcg
60
gtgcctgacc cttccacccg ggccctgcta ctcctggcct tgctgatcct ctacgccctg
120
ctgagccggc tcactggctc ccgagcctct ggggcccaac tcgaggccaa ggtgcgaggg
180
ctggaacgcc aggtggagga gctgcgctgg cgccagaggc gagcggccaa gggggcccgc
240
agtgtggagg aggagtgagc cggatgcccc acacaccgcc agtgtcatac caaagagctg
300
agctgcttcg gggccatgca gccctcctgc cagcccctg ccctttcttt gccctgtctc
360
tgaaccttca gaacattgat ccttgccgca gccccactag ccaagagaaa cagagaaaga
420
ccattccccc tgcctgtcct tgcggccctg tcttctgagg ttctctgtct ggggttggct
480
ctcttaaccc tttctctgct cccagcctgc ctcaccaggg aaggttggag gggcctccct
540
ctggcttctg catctgcgcc agcaaacatc actgccgttg gtctctcatg acttaactgg
600
cttccctctg ctgctgcctt ggcttcctcc taatgctcgt gctctcctgt ccttctgaag
660
ttgctccttg gccaaatctc cagctcccct cttgtttttcc tcatcctcct accctgtact
720

```
cccaccaaac catggtcctt taaggcacgc tcctgtcctc ctcattgccc agcagtaggg
780
aggggcaggg gtaaggggac ctgaggataa agggtgggga aacagggtcc cctgaggcct
840
gtgggggctg caggggagga ggatgtacct tgtgtctctt tcaagtgcct taatccgagc
900
cagcagggcc ttctgcttgc ctgctgccat actgtatgta ggaaagtgtt ctgtggctgc
960
tttgtgtcaa gaaaagagca gtcactctca gaatcttgat tccccatcag ccaaagcaaa
1020
agatggctgc tgctttgtag gcatgtgcct gcaagtggga ccttgctggg cattatatgc
1080
cctgtggggg tttcagagac cctgaaagag gagggaggac ccgcctcctt gtctgcacaa
1140
ctgcatgcac ttctctcccc atcgctccac aacctgaaac cgagaaggag ttgctgacca
1200
gtgcccaccc cggcagcccg ggaggaacac aggcagctcc tttcccttca cgtggtctgc
1260
agagagcagg gtgagctgcc agctgcccct ctccaccagg gtaccctgtc ttggtggtta
1320
ggggccactt ttcctttgag gctctagtgg aggtggatgt ccttctctgc caggcttggc
1380
acatgatgtg aagaataaat gcccaattct tactgttcag gtttgatgtg gaatcacagc
1440
tgcagtgata tatattttt atcagtgctt ggttggtttt aaataaagtg cacgctattt
1500
tattatcttg ttctgaataa aatgtattta ctccaaaaaa aaaaaaaaaa aaaaaaaaaa
1560
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa
1592
```

```
<210> 5210
<211> 85
<212> PRT
<213> Homo sapiens

<400> 5210
Ile Leu Trp Gly Leu Lys Leu Val Ile Phe Leu Ala Gly Phe Val Ala
1               5                   10                  15
Leu Met Arg Ser Val Pro Asp Pro Ser Thr Arg Ala Leu Leu Leu Leu
            20                  25                  30
Ala Leu Leu Ile Leu Tyr Ala Leu Leu Ser Arg Leu Thr Gly Ser Arg
        35                  40                  45
Ala Ser Gly Ala Gln Leu Glu Ala Lys Val Arg Gly Leu Glu Arg Gln
    50                  55                  60
Val Glu Glu Leu Arg Trp Arg Gln Arg Arg Ala Ala Lys Gly Ala Arg
65                  70                  75                  80
Ser Val Glu Glu Glu
                85
```

```
<210> 5211
<211> 602
<212> DNA
<213> Homo sapiens
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<400> 5211
gcagttcagt ctttgattgg ttgctgagag gcggggctac tcgactgctc tggaggtagc
60
ggccgcggtg aggagagcca tgggacgggc agtcaaggtt ttacagctct ttaaaacact
120
gcacaggacc agacaacaag tttttaaaaa tgatgccaga gcattagaag cagccagaat
180
aaagataaat gaagaattca aaataataa aagtgaaact tcttctaaga aaatagaaga
240
gctaatgaaa ataggttctg atgttgaatt attactcaga acatctgtta tacaaggtat
300
tcacacagac cacaatacac tgaaactggt ccctaggaaa gaccttcttg tagaaaatgt
360
gccatattgt gatgcaccaa ctcagaagca atgagttttc tagaatacaa caagtctttg
420
tactttttaa ctttaaaatc tacaactctg gcaaaagtcc tggaaatgca gacattttcc
480
ctgaactggc atattgaaaa tgaatgaatt acagaatagc ttcatattta aatttcatgt
540
taaaaggtca ttactgagaa ctaaagaaca taattaagta tttctaaagg aaattagata
600
ag
602

<210> 5212
<211> 104
<212> PRT
<213> Homo sapiens

<400> 5212
Met Gly Arg Ala Val Lys Val Leu Gln Leu Phe Lys Thr Leu His Arg
1   5   10   15
Thr Arg Gln Gln Val Phe Lys Asn Asp Ala Arg Ala Leu Glu Ala Ala
                20   25   30
Arg Ile Lys Ile Asn Glu Glu Phe Lys Asn Asn Lys Ser Glu Thr Ser
                35   40   45
Ser Lys Lys Ile Glu Glu Leu Met Lys Ile Gly Ser Asp Val Glu Leu
        50   55   60
Leu Leu Arg Thr Ser Val Ile Gln Gly Ile His Thr Asp His Asn Thr
65   70   75   80
Leu Lys Leu Val Pro Arg Lys Asp Leu Leu Val Glu Asn Val Pro Tyr
                85   90   95
Cys Asp Ala Pro Thr Gln Lys Gln
                100

<210> 5213
<211> 4387
<212> DNA
<213> Homo sapiens

<400> 5213
nnccgcggag ctacggtttc ctccagaggt ctccgcccct ctgcccctat attcccagaa
60

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cccgagtctg atccgggcct tgccgggcac cctggaaagg cgggggtgat agtacagatg
120
gagacgcaac tgcagagcat tttcgaagag gtggtgaaaa cggaagttat agaagaggct
180
tttcctggca tgtttatgga tactcctgaa gatgagaaaa caaaactaat tagctgtttg
240
ggggccttca gacagttttg gggtggactt tctcaggagt ctcatgaaca gtgtatccag
300
tggattgtta agtttattca tggtcagcat agtcctaaaa gaatttcttt tctttatgac
360
tgcttagcaa tggcagttga gactggtctc cttccaccca ggctggtttg tgaatccctg
420
ataaactctg acactcttga gtgggaaaga acacagcttt gggccttaac atttaaactg
480
gttcggaaaa taattggggg agtggattac aagggtgttc gagatctctt aaaagtgatt
540
ttggagaaga tttttgacaat tcctaataca gtgagctctg ctgttgtaca gcagcttctg
600
gcagcaagag aggttatagc atatatcttg gaaagaaatg cctgcttatt accagcctat
660
tttgcagtca ctgagatcag gaaactgtat cctgaaggca aacttccaca ctggttactt
720
ggaaacctag tatcagactt tgtggatacc ttcaggccca cagcaaggat aaactccatt
780
tgtggtcgct gtagtcttct gccagttgta ataattcgg gtgccatttg taattcatgg
840
aaactggatc ctgctactct tcgttttcct ttgaaaggcc ttttgccata tgataaggat
900
ctgtttgaac cacagactgc tttgttgaga tatgtattgg agcagcctta ttccagggat
960
atggtctgca atatgctagg tttaaataag cagcacaagc agcgctgccc tgtgctggag
1020
gaccagttgg tggatctggt tgtttatgcc atggagcgat ctgagaccga ggagaagttt
1080
gacgatgggg gaacaagcca actcctgtgg cagcatctct caagtcagct cattttcttt
1140
gtgcttttcc agtttgcaag ttttccacat atggtgcttt ctcttcatca gaagttagca
1200
gggcgaggac tgattaaagg cagagatcat cttatgtggg ttctcctgca attcatttct
1260
ggaagtattc agaaaaatgc actagctgat tttctccctg tgatgaagct cttcgacttg
1320
ctatacccag aaaaagaata tatcccagtt cctgatatta acaaacccca gtcaacccat
1380
gcctttgcaa tgacctgtat ttggattcat ctcaatagaa aagctcaaaa tgacaactcc
1440
aagctacaga ttccaatacc tcattcccta agacttcacc atgagttcct gcagcagagt
1500
ctaagacata aaagtttaca gatgaatgac tataagattg ctctattgtg taatgcatac
1560
tctacaaatt cagaatgtgt acattaccc atgggagctc tggtagaaac tatttatgga
1620
aatggaatta tgagactacc tctccctgga acaaactgta tggcttcagc atctattacc
1680
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cccttaccta tgaacctcct ggattcactg acagttcatg ccaaaatgag ccttattcac
1740
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1800
gccctagtgg aaacttacag tcgtttattg gtctatatgg aaatagagtc tttgggcatc
1860
aaaggattta tcagtcagct tttgccaact gtgttcaaat cacatgcatg ggggatctta
1920
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1980
cagctcctga gtcatcttca tactttggct gcagttgcac aaacaaacca gaaccagctc
2040
catctttgtg tcgagagcac tgctctcagg cttataacag cattaggtag ctcagaggta
2100
caaccgcagt ttacacgctt ccttagtgat cccaaaacag tgctctcagc agaatctgaa
2160
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2220
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2280
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2340
ttcttcaaac aaaataatgt gcctcaggaa agccgtttta atctgaaaaa aaatgtggag
2400
gaggagtata ggaagtggaa gtcaatgagc aacgaaaacg acattattac ccacttctct
2460
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2580
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2640
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2700
ctggacagat taattctctg cctggccatg cgtagtcacg aaggaaatga agcccaggtt
2760
tgttatttca taattcagtt gctgttactc aaaccaaacg attttagaaa tcgagtaagt
2820
gactttgtga aggaaaattc cccagagcac tggttacaga atgactggca caccaagcac
2880
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2940
gatcctcctg tacagatcca gtctccctat ctgcccatct attttgggaa tgtgtgtctt
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3120
gtgacttatc tgtataacac tctgcactat tatgaaatgc acctgagaga ccgcgcattt
3180
ctcaaacgaa aactcgtcca tgcgatcatt ggctctctga aggataatcg accgcagggc
3240
tggtgtctaa gtgacactta cctgaaatgc gctatgaatg cacgagagga aaatccttgg
3300

4392

```
gttccagatg acacctacta ttgcagattg attggcagac tagtcgatac gatggctggc
3360
aaatctcctg gtccctttcc aaactgtgac tggagattca atgagtttcc caacccagct
3420
gcccatgctc tccatgttac ttgtgtggag ctcatggcct tggcagtttc aggcaaagaa
3480
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3540
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3600
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3660
gagtgggttg gctatccatt ccgcctcttt gatttcactg cctgtcatca gtcctactct
3720
gagatgagtt gtagctatac gttagctctt gcacatgctg tgtggcacca ttctagcatc
3780
ggacaacttt ctctcattcc aaagtttctt actgaagtac ttcttcctat agtgaagacc
3840
gaattccagt tgctttatgt ataccatctt gttggaccat ttttacaaag atttcagcaa
3900
gagagaactc gttgtatgat agagattggt gtggcgtttt atgacatgct gctgaatgtt
3960
gaccagtgta gcacccattt aaattacatg gatcccatct gtgacttcct ctatcacatg
4020
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4080
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4200
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4260
tatatttgta aatacagtac acattttatt tcttggattt tgagagacat tgttaatttt
4320
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4380
accaaaa
4387
```

```
<210> 5214
<211> 1364
<212> PRT
<213> Homo sapiens
```

```
<400> 5214
Met Glu Thr Gln Leu Gln Ser Ile Phe Glu Glu Val Val Lys Thr Glu
1               5                   10                  15
Val Ile Glu Glu Ala Phe Pro Gly Met Phe Met Asp Thr Pro Glu Asp
            20                  25                  30
Glu Lys Thr Lys Leu Ile Ser Cys Leu Gly Ala Phe Arg Gln Phe Trp
        35                  40                  45
Gly Gly Leu Ser Gln Glu Ser His Glu Gln Cys Ile Gln Trp Ile Val
    50                  55                  60
Lys Phe Ile His Gly Gln His Ser Pro Lys Arg Ile Ser Phe Leu Tyr
```

```
65                    70                    75                    80
Asp Cys Leu Ala Met Ala Val Glu Thr Gly Leu Leu Pro Pro Arg Leu
                85                    90                    95
Val Cys Glu Ser Leu Ile Asn Ser Asp Thr Leu Glu Trp Glu Arg Thr
               100                   105                   110
Gln Leu Trp Ala Leu Thr Phe Lys Leu Val Arg Lys Ile Ile Gly Gly
           115                   120                   125
Val Asp Tyr Lys Gly Val Arg Asp Leu Leu Lys Val Ile Leu Glu Lys
    130                   135                   140
Ile Leu Thr Ile Pro Asn Thr Val Ser Ser Ala Val Val Gln Gln Leu
145                   150                   155                   160
Leu Ala Ala Arg Glu Val Ile Ala Tyr Ile Leu Glu Arg Asn Ala Cys
                165                   170                   175
Leu Leu Pro Ala Tyr Phe Ala Val Thr Glu Ile Arg Lys Leu Tyr Pro
                180                   185                   190
Glu Gly Lys Leu Pro His Trp Leu Leu Gly Asn Leu Val Ser Asp Phe
            195                   200                   205
Val Asp Thr Phe Arg Pro Thr Ala Arg Ile Asn Ser Ile Cys Gly Arg
    210                   215                   220
Cys Ser Leu Leu Pro Val Val Asn Asn Ser Gly Ala Ile Cys Asn Ser
225                   230                   235                   240
Trp Lys Leu Asp Pro Ala Thr Leu Arg Phe Pro Leu Lys Gly Leu Leu
                245                   250                   255
Pro Tyr Asp Lys Asp Leu Phe Glu Pro Gln Thr Ala Leu Leu Arg Tyr
                260                   265                   270
Val Leu Glu Gln Pro Tyr Ser Arg Asp Met Val Cys Asn Met Leu Gly
            275                   280                   285
Leu Asn Lys Gln His Lys Gln Arg Cys Pro Val Leu Glu Asp Gln Leu
    290                   295                   300
Val Asp Leu Val Val Tyr Ala Met Glu Arg Ser Glu Thr Glu Glu Lys
305                   310                   315                   320
Phe Asp Asp Gly Gly Thr Ser Gln Leu Leu Trp Gln His Leu Ser Ser
            325                   330                   335
Gln Leu Ile Phe Phe Val Leu Phe Gln Phe Ala Ser Phe Pro His Met
            340                   345                   350
Val Leu Ser Leu His Gln Lys Leu Ala Gly Arg Gly Leu Ile Lys Gly
            355                   360                   365
Arg Asp His Leu Met Trp Val Leu Leu Gln Phe Ile Ser Gly Ser Ile
    370                   375                   380
Gln Lys Asn Ala Leu Ala Asp Phe Leu Pro Val Met Lys Leu Phe Asp
385                   390                   395                   400
Leu Leu Tyr Pro Glu Lys Glu Tyr Ile Pro Val Pro Asp Ile Asn Lys
                405                   410                   415
Pro Gln Ser Thr His Ala Phe Ala Met Thr Cys Ile Trp Ile His Leu
            420                   425                   430
Asn Arg Lys Ala Gln Asn Asp Asn Ser Lys Leu Gln Ile Pro Ile Pro
            435                   440                   445
His Ser Leu Arg Leu His His Glu Phe Leu Gln Gln Ser Leu Arg His
            450                   455                   460
Lys Ser Leu Gln Met Asn Asp Tyr Lys Ile Ala Leu Leu Cys Asn Ala
465                   470                   475                   480
Tyr Ser Thr Asn Ser Glu Cys Val Thr Leu Pro Met Gly Ala Leu Val
                485                   490                   495
Glu Thr Ile Tyr Gly Asn Gly Ile Met Arg Leu Pro Leu Pro Gly Thr
```

4394

```
                    500                     505                     510
Asn Cys Met Ala Ser Ala Ser Ile Thr Pro Leu Pro Met Asn Leu Leu
          515                     520                     525
Asp Ser Leu Thr Val His Ala Lys Met Ser Leu Ile His Ser Ile Ala
      530                     535                     540
Thr Arg Val Ile Lys Leu Ala His Ala Lys Ser Ser Val Ala Leu Ala
545                     550                     555                     560
Pro Ala Leu Val Glu Thr Tyr Ser Arg Leu Leu Val Tyr Met Glu Ile
                565                     570                     575
Glu Ser Leu Gly Ile Lys Gly Phe Ile Ser Gln Leu Leu Pro Thr Val
          580                     585                     590
Phe Lys Ser His Ala Trp Gly Ile Leu His Thr Leu Leu Glu Met Phe
          595                     600                     605
Ser Tyr Arg Met His His Ile Gln Pro His Tyr Arg Val Gln Leu Leu
      610                     615                     620
Ser His Leu His Thr Leu Ala Ala Val Ala Gln Thr Asn Gln Asn Gln
625                     630                     635                     640
Leu His Leu Cys Val Glu Ser Thr Ala Leu Arg Leu Ile Thr Ala Leu
                645                     650                     655
Gly Ser Ser Glu Val Gln Pro Gln Phe Thr Arg Phe Leu Ser Asp Pro
          660                     665                     670
Lys Thr Val Leu Ser Ala Glu Ser Glu Glu Leu Asn Arg Ala Leu Ile
          675                     680                     685
Leu Thr Leu Ala Arg Ala Thr His Val Thr Asp Phe Phe Thr Gly Ser
      690                     695                     700
Asp Ser Ile Gln Gly Thr Trp Cys Lys Asp Ile Leu Gln Thr Ile Met
705                     710                     715                     720
Ser Phe Thr Pro His Asn Trp Ala Ser His Thr Leu Ser Cys Phe Pro
                725                     730                     735
Gly Pro Leu Gln Ala Phe Phe Lys Gln Asn Asn Val Pro Gln Glu Ser
          740                     745                     750
Arg Phe Asn Leu Lys Lys Asn Val Glu Glu Glu Tyr Arg Lys Trp Lys
          755                     760                     765
Ser Met Ser Asn Glu Asn Asp Ile Ile Thr His Phe Ser Met Gln Gly
770                     775                     780
Ser Pro Pro Leu Phe Leu Cys Leu Leu Trp Lys Met Leu Leu Glu Thr
785                     790                     795                     800
Asp His Ile Asn Gln Ile Gly Tyr Arg Val Leu Glu Arg Ile Gly Ala
                805                     810                     815
Arg Ala Leu Val Ala His Val Arg Thr Phe Ala Asp Phe Leu Val Tyr
          820                     825                     830
Glu Phe Ser Thr Ser Ala Gly Gly Gln Gln Leu Asn Lys Cys Ile Glu
          835                     840                     845
Ile Leu Asn Asp Met Val Trp Lys Tyr Asn Ile Val Thr Leu Asp Arg
      850                     855                     860
Leu Ile Leu Cys Leu Ala Met Arg Ser His Glu Gly Asn Glu Ala Gln
865                     870                     875                     880
Val Cys Tyr Phe Ile Ile Gln Leu Leu Leu Leu Lys Pro Asn Asp Phe
                885                     890                     895
Arg Asn Arg Val Ser Asp Phe Val Lys Glu Asn Ser Pro Glu His Trp
          900                     905                     910
Leu Gln Asn Asp Trp His Thr Lys His Met Asn Tyr His Lys Lys Tyr
      915                     920                     925
Pro Glu Lys Leu Tyr Phe Glu Gly Leu Ala Glu Gln Val Asp Pro Pro
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            930                  935                  940
Val Gln Ile Gln Ser Pro Tyr Leu Pro Ile Tyr Phe Gly Asn Val Cys
945                  950                  955                  960
Leu Arg Phe Leu Pro Val Phe Asp Ile Val Ile His Arg Phe Leu Glu
                965                  970                  975
Leu Leu Pro Val Ser Lys Ser Leu Glu Thr Leu Leu Asp His Leu Gly
                980                  985                  990
Gly Leu Tyr Lys Phe His Asp Arg Pro Val Thr Tyr Leu Tyr Asn Thr
            995                  1000                 1005
Leu His Tyr Tyr Glu Met His Leu Arg Asp Arg Ala Phe Leu Lys Arg
        1010                 1015                 1020
Lys Leu Val His Ala Ile Ile Gly Ser Leu Lys Asp Asn Arg Pro Gln
1025                 1030                 1035                 1040
Gly Trp Cys Leu Ser Asp Thr Tyr Leu Lys Cys Ala Met Asn Ala Arg
                1045                 1050                 1055
Glu Glu Asn Pro Trp Val Pro Asp Asp Thr Tyr Tyr Cys Arg Leu Ile
                1060                 1065                 1070
Gly Arg Leu Val Asp Thr Met Ala Gly Lys Ser Pro Gly Pro Phe Pro
            1075                 1080                 1085
Asn Cys Asp Trp Arg Phe Asn Glu Phe Pro Asn Pro Ala Ala His Ala
        1090                 1095                 1100
Leu His Val Thr Cys Val Glu Leu Met Ala Leu Ala Val Ser Gly Lys
1105                 1110                 1115                 1120
Glu Val Gly Asn Ala Leu Leu Asn Val Val Leu Lys Ser Gln Pro Leu
                1125                 1130                 1135
Val Pro Arg Glu Asn Ile Thr Ala Trp Met Asn Ala Ile Gly Leu Ile
                1140                 1145                 1150
Ile Thr Ala Leu Pro Glu Pro Tyr Trp Ile Val Leu His Asp Arg Ile
                1155                 1160                 1165
Val Ser Val Ile Ser Ser Pro Ser Leu Thr Ser Glu Thr Glu Trp Val
            1170                 1175                 1180
Gly Tyr Pro Phe Arg Leu Phe Asp Phe Thr Ala Cys His Gln Ser Tyr
1185                 1190                 1195                 1200
Ser Glu Met Ser Cys Ser Tyr Thr Leu Ala Leu Ala His Ala Val Trp
                1205                 1210                 1215
His His Ser Ser Ile Gly Gln Leu Ser Leu Ile Pro Lys Phe Leu Thr
            1220                 1225                 1230
Glu Val Leu Leu Pro Ile Val Lys Thr Glu Phe Gln Leu Leu Tyr Val
            1235                 1240                 1245
Tyr His Leu Val Gly Pro Phe Leu Gln Arg Phe Gln Gln Glu Arg Thr
        1250                 1255                 1260
Arg Cys Met Ile Glu Ile Gly Val Ala Phe Tyr Asp Met Leu Leu Asn
1265                 1270                 1275                 1280
Val Asp Gln Cys Ser Thr His Leu Asn Tyr Met Asp Pro Ile Cys Asp
                1285                 1290                 1295
Phe Leu Tyr His Met Lys Tyr Met Phe Thr Gly Asp Ser Val Lys Glu
            1300                 1305                 1310
Gln Val Glu Lys Ile Ile Cys Asn Leu Lys Pro Ala Leu Lys Leu Arg
            1315                 1320                 1325
Leu Arg Phe Ile Thr His Ile Ser Lys Met Glu Pro Ala Ala Val Pro
        1330                 1335                 1340
Pro Gln Ala Met Asn Ser Gly Ser Pro Ala Pro Gln Ser Asn Gln Val
1345                 1350                 1355                 1360
Asp Thr Leu Thr
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<210> 5215
<211> 548
<212> DNA
<213> Homo sapiens

<400> 5215
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120
ggtttagaa gcagcaagag aactagaatg agaaggactt ggagatgtga ctgcattgtc
180
gctgtctcgc gagaaaactt taacacgtga ggagttgcct ctgaagggtg agcaggggag
240
ttgcttcagt tgcgctctag tcccagtgaa gattctgtga acctgggggt aatgaggaca
300
aagaacttgg aacagcccgg aacctcggtt gatgaagccg cggccgggnt tgagaggacc
360
gactgcagtt ctgaaagacg ttctgctgtg ggttcaatgc tatcagacag catcacgccc
420
cacagagaaa tctttcatga aaggaagagt ccatcgctgt ggccaacttt tttgtggtca
480
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540
acattgag
548


<210> 5216
<211> 83
<212> PRT
<213> Homo sapiens

<400> 5216
Ala Gly Glu Leu Leu Gln Leu Arg Ser Ser Pro Ser Glu Asp Ser Val
 1               5                  10                  15
Asn Leu Gly Val Met Arg Thr Lys Asn Leu Glu Gln Pro Gly Thr Ser
                20                  25                  30
Val Asp Glu Ala Ala Ala Gly Xaa Glu Arg Thr Asp Cys Ser Ser Glu
            35                  40                  45
Arg Arg Ser Ala Val Gly Ser Met Leu Ser Asp Ser Ile Thr Pro His
        50                  55                  60
Arg Glu Ile Phe His Glu Arg Lys Ser Pro Ser Leu Trp Pro Thr Phe
65                  70                  75                  80
Leu Trp Ser


<210> 5217
<211> 4189
<212> DNA
<213> Homo sapiens

<400> 5217
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120
ccccactggc gcaggctgcc ccaggccctg tgcagacaca ccaggccctc agccgcagcc
180
catggacctg cgggtgccag cggcccccag tggagccccc accagagccc acattgctgg
240
ccctgcagcg tccccagcgc ctgcaccacc acctcttcct agcaggcctg cagcagcagc
300
gctcggtgga gcccatgagg ctctccatgg acacgccgat gcccgagttg caggtgggac
360
cccaggaaca acagctgcgg cagcttctcc acaaggacaa gagcaagcga agtgctgtag
420
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480
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540
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600
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660
tgcgctataa gcccaagaag tccctggagc ggaggaagaa tccactgctc cgaaaggaga
720
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840
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900
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960
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1020
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1080
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1140
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1200
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1260
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1320
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1440
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1560
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1620
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1860
cggagccagt gtgagtgtct ccgaggccgg aaggcctccc tggaagagct gcagtcggtc
1920
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1980
aacgggaagc tggcagggct cctggcacag cggatgtttg tgatgctgcc ctgtggtggg
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2100
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2160
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3060
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3120
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3180
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3240
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3300

·gtatgggccc tggctgtggc ccccattcct caggactgca cagaggagga ctggctccgg
3360

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3420

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3480

tctaggggct aggggggagt ggggagccaa gaggtcccat attcctgagt gcaggggtag
3540

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3600

acgaagctcc ctgacagccg agactggcag ccctccatct ggtccgtacc ctcgccagag
3660

gccccctac atcaacctcc tggcgatgcc ctggtggagc agatgggtgc tctgggagtc
3720

ctgtgcttcc tgatccaatg gtgccaaacc cttcatctcc cccagaagcg cagcataccc
3780

ctgggacccc tcggccactg cccactcggg gagccttctc tgtttctggg gcctccccca
3840

ccatagctct gattcccacc ccacatagga atagcctgac tgaggggggaa ggggtgggag
3900

agaagataca gacatggagg aggggaggct gctctggcaa agtcttcaag gcttttgggg
3960

gtccaggcct ggggtcaaga aggaaaatgt gtgtgagcat gtgtgtgagt gaggcgtgtg
4020

tgtgagcgtg tgtgtgagtg aggcgtgtgt gtgtgtcttt cctaggaccc accataccct
4080

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4140

gttttatttg ctttaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa
4189

<210> 5218
<211> 541
<212> PRT
<213> Homo sapiens

<400> 5218
Met Ala Gly Asp Arg Ala Arg Trp Trp Thr Met Ala Trp Ser Thr Gly
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Ser Trp Ala Met Gly Ser Leu Arg Pro Glu Ala Pro Leu Leu Ser Ser
            20   25   30
Ser Thr Leu Arg Cys Cys Ser Gly Asn Ser Ser Asp Trp Leu Gly Gly
            35   40   45
Ser Pro Gly Ala Ala Pro Gly Thr Leu Cys Cys Phe Leu Trp Pro Arg
    50   55   60
Val Gly Thr Gly Leu Cys Pro Gly Leu Ser Leu Pro Gln Pro His Leu
65   70   75   80
Pro His Cys Gln Pro Gln Ser Leu Pro Ala Xaa Ala Arg Val Leu Ser
                85   90   95
Ser Ser Glu Thr Pro Ala Arg Thr Leu Pro Phe Thr Thr Gly Leu Ile
                100   105   110
Tyr Asp Ser Val Met Leu Lys His Gln Cys Ser Cys Gly Asp Asn Ser

4400

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                115                   120                   125
Arg His Pro Glu His Ala Gly Arg Ile Gln Ser Ile Trp Ser Arg Leu
    130                   135                   140
Gln Glu Arg Gly Leu Arg Ser Gln Cys Glu Cys Leu Arg Gly Arg Lys
145                   150                   155                   160
Ala Ser Leu Glu Glu Leu Gln Ser Val His Ser Glu Arg His Val Leu
                165                   170                   175
Leu Tyr Gly Thr Asn Pro Leu Ser Arg Leu Lys Leu Asp Asn Gly Lys
                180                   185                   190
Leu Ala Gly Leu Leu Ala Gln Arg Met Phe Val Met Leu Pro Cys Gly
            195                   200                   205
Gly Val Gly Val Asp Thr Asp Thr Ile Trp Asn Glu Leu His Ser Ser
    210                   215                   220
Asn Ala Ala Arg Trp Ala Ala Gly Ser Val Thr Asp Leu Ala Phe Lys
225                   230                   235                   240
Val Ala Ser Arg Glu Leu Lys Asn Gly Phe Ala Val Val Arg Pro Pro
                245                   250                   255
Gly His His Ala Asp His Ser Thr Ala Met Gly Phe Cys Phe Phe Asn
                260                   265                   270
Ser Val Ala Ile Ala Cys Arg Gln Leu Gln Gln Gln Ser Lys Ala Ser
            275                   280                   285
Lys Ile Leu Ile Val Asp Trp Asp Val His His Gly Asn Ala Thr Gln
    290                   295                   300
Gln Thr Phe Tyr Gln Asp Pro Ser Val Leu Tyr Ile Ser Leu His Arg
305                   310                   315                   320
His Asp Asp Gly Asn Phe Phe Pro Gly Ser Gly Ala Val Asp Glu Val
                325                   330                   335
Gly Ala Gly Ser Gly Glu Gly Phe Asn Val Asn Val Ala Trp Ala Gly
            340                   345                   350
Gly Leu Asp Pro Pro Met Gly Asp Pro Glu Tyr Leu Ala Ala Phe Arg
            355                   360                   365
Ile Val Val Met Pro Ile Ala Arg Glu Phe Ser Pro Asp Leu Val Leu
    370                   375                   380
Val Ser Ala Gly Phe Asp Ala Ala Glu Gly His Pro Ala Pro Leu Gly
385                   390                   395                   400
Gly Tyr His Val Ser Ala Lys Cys Phe Gly Tyr Met Thr Gln Gln Leu
                405                   410                   415
Met Asn Leu Ala Gly Gly Ala Val Val Leu Ala Leu Glu Gly Gly His
            420                   425                   430
Asp Leu Thr Ala Ile Cys Asp Ala Ser Glu Ala Cys Val Ala Ala Leu
            435                   440                   445
Leu Gly Asn Arg Val Asp Pro Leu Ser Glu Glu Gly Trp Lys Gln Lys
    450                   455                   460
Pro Asn Leu Asn Ala Ile Arg Ser Leu Glu Ala Val Ile Arg Val His
465                   470                   475                   480
Ser Lys Tyr Trp Gly Cys Met Gln Arg Leu Ala Ser Cys Pro Asp Ser
            485                   490                   495
Trp Val Pro Arg Val Pro Gly Ala Asp Lys Glu Glu Val Glu Ala Val
        500                   505                   510
Thr Ala Leu Ala Ser Leu Ser Val Gly Ile Leu Ala Glu Asp Arg Pro
    515                   520                   525
Ser Glu Gln Leu Val Glu Glu Glu Pro Met Asn Leu
    530                   535                   540
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4401

<210> 5219
<211> 1212
<212> DNA
<213> Homo sapiens

<400> 5219
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120
aacgtctccc tgctcacccc accccgcgc agacgcagtg ctgagcacac agctaccgga
180
caaagagtga cgcccggagc tggagttatg gcggctacgg agccgatctt ggcggccact
240
gggagtcccg cggcggtgcc accggagaaa ctggaaggag ccggttcgag ctcagcccct
300
gagcgtaact gtgtgggctc ctcgctgcca gaggcctcac cgcctgcccc tgagccttcc
360
agtcccaacg ccgcggtccc tgaagccatc cctacgcccc gagctgcggc ctccgcggcc
420
ctggagctgc ctctcgggcc cgcacccgtg agcgtagcgc ctcaggccga agctgaagcg
480
cgctccacac caggccccgc cggctctaga ctcggtcccg agacgttccg ccagcgtttc
540
cggcagttcc gctaccagga tgcggcgggt ccccgggagg ctttccggca gctgcgggag
600
ctgtcccgcc agtggctgcg gcctgacatc cgcaccaagg agcagatcgt ggagatgctg
660
gtgcaagagc agctgctcgc catcctgccc gaggcggctc gggcccggcg gatccgccgc
720
cgcacggatg tgcgcatcac tggctgagcg gtggagctgc gggcggccag ggccgggcgc
780
tctgtgcgga ctggggccat gatcgggccc ggggggcctga gcctgggacc ccaccccgtg
840
ttaatgaaaa atgagttttg gcagcgcctg tggtctggtg tgtctctttc attcgttctt
900
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960
ttgggagtcc gtaacaataa ggccttcgtt ggctatagtg ggatctttag atgttgactg
1020
aacctaggtt atccctctac cacacatggg aagttttttca cctgggctcc caaggaccca
1080
cttgggtttc ttacacgcaa aatagctggc tctattaaat gctcacttaa ctggctacct
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1200
cnagttactg gg
1212

<210> 5220
<211> 179
<212> PRT
<213> Homo sapiens

<400> 5220
Met Ala Ala Thr Glu Pro Ile Leu Ala Ala Thr Gly Ser Pro Ala Ala
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Val Pro Pro Glu Lys Leu Glu Gly Ala Gly Ser Ser Ser Ala Pro Glu
            20   25   30
Arg Asn Cys Val Gly Ser Ser Leu Pro Glu Ala Ser Pro Pro Ala Pro
        35   40   45
Glu Pro Ser Ser Pro Asn Ala Ala Val Pro Glu Ala Ile Pro Thr Pro
    50   55   60
Arg Ala Ala Ala Ser Ala Ala Leu Glu Leu Pro Leu Gly Pro Ala Pro
65   70   75   80
Val Ser Val Ala Pro Gln Ala Glu Ala Glu Ala Arg Ser Thr Pro Gly
                85   90   95
Pro Ala Gly Ser Arg Leu Gly Pro Glu Thr Phe Arg Gln Arg Phe Arg
                100   105   110
Gln Phe Arg Tyr Gln Asp Ala Ala Gly Pro Arg Glu Ala Phe Arg Gln
            115   120   125
Leu Arg Glu Leu Ser Arg Gln Trp Leu Arg Pro Asp Ile Arg Thr Lys
    130   135   140
Glu Gln Ile Val Glu Met Leu Val Gln Glu Gln Leu Leu Ala Ile Leu
145   150   155   160
Pro Glu Ala Ala Arg Ala Arg Arg Ile Arg Arg Arg Thr Asp Val Arg
                165   170   175
Ile Thr Gly

<210> 5221
<211> 497
<212> DNA
<213> Homo sapiens

<400> 5221
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120
gacacctccc tgaccagaga ccctctggtt atagaacttg gccaaaagca ggtgattcca
180
ggtctggagc agagtcttct cgacatgtgt gtgggagaga agcgaagggc aatcattcct
240
tctcacttgg cctatggaaa acggggattt ccaccatctg tcccagggac taaagacaac
300
ctgatgaggc cacctggcat gacctccagc agccagtaac ttgttaggga agagacctgc
360
ttgggccaca tgggtctgct gcctgtgrca ccacctttcc cagaacactg gacttctttc
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ctgccctttt ctacaactct acgctgtgtc agctgtacag ccacccccca cccccttcctt
480
tcagccacca tctgtcc
497

<210> 5222
<211> 112
<212> PRT

<213> Homo sapiens

<400> 5222
Xaa Arg Thr Leu Gln Val Glu Thr Leu Val Glu Pro Pro Glu Pro Cys
1   5   10   15
Ala Glu Pro Ala Ala Phe Gly Asp Thr Leu His Ile His Tyr Thr Gly
            20   25   30
Ser Leu Val Asp Gly Arg Ile Ile Asp Thr Ser Leu Thr Arg Asp Pro
            35   40   45
Leu Val Ile Glu Leu Gly Gln Lys Gln Val Ile Pro Gly Leu Glu Gln
        50   55   60
Ser Leu Leu Asp Met Cys Val Gly Glu Lys Arg Arg Ala Ile Ile Pro
65   70   75   80
Ser His Leu Ala Tyr Gly Lys Arg Gly Phe Pro Pro Ser Val Pro Gly
            85   90   95
Thr Lys Asp Asn Leu Met Arg Pro Pro Gly Met Thr Ser Ser Ser Gln
            100   105   110

<210> 5223
<211> 637
<212> DNA
<213> Homo sapiens

<400> 5223
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120
tcagagaaga caggacgggg acagttgagg gaaggctgga gagatagtca tcagcctatc
180
atgtgctcct acaagctggt gactgtgaag tttgaggtct gggggcttca gaccagagtg
240
gaacaatttg tacacaaggt ggtccgagac attctgctga ttggacatag acaggctttt
300
gcatgggttg atgagtggta tgatatgaca atggatgatg ttcgggaata cgagaaaaac
360
atgcatgaac aaaccaacat aaaagtttgc aatcagcatt cctcccctgt ggatgacata
420
gagagtcatg cccaaacaag tacatgacaa tggatgaagt ccgagaattt gaacgagcca
480
ctcaggaagc caccaacaag aaaatcggca ttttcccacc tgcaatttct atctccagca
540
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600
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637

<210> 5224
<211> 148
<212> PRT
<213> Homo sapiens

<400> 5224
Xaa Thr Ile Phe Asp Asn Glu Ala Lys Asp Val Glu Arg Glu Val Cys

```
     1                5                    10                    15
Phe Ile Asp Ile Ala Cys Asp Glu Ile Pro Glu Arg Tyr Tyr Lys Glu
              20              25              30
Ser Glu Asp Pro Lys His Phe Lys Ser Glu Lys Thr Gly Arg Gly Gln
          35              40              45
Leu Arg Glu Gly Trp Arg Asp Ser His Gln Pro Ile Met Cys Ser Tyr
     50              55              60
Lys Leu Val Thr Val Lys Phe Glu Val Trp Gly Leu Gln Thr Arg Val
65              70              75              80
Glu Gln Phe Val His Lys Val Val Arg Asp Ile Leu Leu Ile Gly His
              85              90              95
Arg Gln Ala Phe Ala Trp Val Asp Glu Trp Tyr Asp Met Thr Met Asp
          100             105             110
Asp Val Arg Glu Tyr Glu Lys Asn Met His Glu Gln Thr Asn Ile Lys
          115             120             125
Val Cys Asn Gln His Ser Ser Pro Val Asp Asp Ile Glu Ser His Ala
     130             135             140
Gln Thr Ser Thr
145
```

<210> 5225
<211> 394
<212> DNA
<213> Homo sapiens

<400> 5225

```
acgcgtgaag gggctggggt gggcaatcag ggaggacttc ctggaggcgg cagctgaggc
60
tggggcagag aaggacccag ggcactggaa ggggaaggag aaacgtaagc agagtcttgg
120
caggcctggt cagacggaca tgcccaaggg aacagatagt accaggacag gggaccctgg
180
tctgaagggg cgatagcctg gcccccagtg aaacagccc ctcccaaccc tggcggcaga
240
cagggagggt cggcaggtat gtgagatgca aacctggggg actgcccatc ccccagtgga
300
tgtgaggaca cggtgggttc aggaagtgga gtgacaaatg ggctgtgctg gacttgcttt
360
ccccacatga aggttaggaa ccaagagaac ggcc
394
```

<210> 5226
<211> 113
<212> PRT
<213> Homo sapiens

<400> 5226

```
Met Trp Gly Lys Gln Val Gln His Ser Pro Phe Val Thr Pro Leu Pro
 1               5                    10                    15
Glu Pro Thr Val Ser Ser His Pro Leu Gly Asp Gly Gln Ser Pro Arg
              20              25              30
Phe Ala Ser His Ile Pro Ala Asp Pro Pro Cys Leu Pro Pro Gly Leu
          35              40              45
Gly Gly Ala Val Ser Thr Gly Gly Gln Ala Ile Ala Pro Ser Asp Gln
```

```
         50                      55                    60
     Gly Pro Leu Ser Trp Tyr Tyr Leu Phe Pro Trp Ala Cys Pro Ser Asp
     65                      70                    75                    80
     Gln Ala Cys Gln Asp Ser Ala Tyr Val Ser Pro Ser Pro Ser Ser Ala
                         85                    90                    95
     Leu Gly Pro Ser Leu Pro Gln Pro Gln Leu Pro Pro Pro Gly Ser Pro
                    100                   105                   110
     Pro
```

```
<210> 5227
<211> 2366
<212> DNA
<213> Homo sapiens

<400> 5227
tcgcgaacag gccacccagg cacacgtgga tgttctttag ctccttggcg ccaccagatg
60
cagctgccag tgagatgttc tgcagctgtt tgatcctctc gctgaagtcg gacacccact
120
ggatgacggt catgccggca ggcaccgtgt agaaggccag tgtggtaacc ttacctgtct
180
acctgaactt caccgtgca gacctcatct tcaccgtgga cttcgaaatt gctacaaagg
240
aggatcctcg cagcttctac gagcggggtg tcgcagtctt gtgcacagag taaactttc
300
tagctgcccc tttctgtaat agtgaaagtt ggtatttaac atttattcat ttttaaaata
360
tttggaaggt ctgagcttgt gaaaagaaag tggttggtct gaggttggag gaagctgaat
420
ggaatctgac ggttgggagt ggtggaaatt ggaaggatac caggaggtat ttgggaaaac
480
cttacggagc tgccctcgtc tactggagca gaagaaatag acctaatttt cctcaaggga
540
attatggaga atcctattgt aaaatcactt gctaaggctc gtgagaggct agaagattcc
600
aaactagaag ctgtcagtga caataacttg gaattagtca atgaaattct tgaagacatc
660
actcctctaa taaatgtgga tgaaaatgtg gcagaattgg ttggtatact caaagaacct
720
cacttccagt cactgttgga ggcccatgat attgtggcat caaagtgtta tgattcacct
780
ccatcaagcc cagaaatgaa taattcttct atcaataatc agttattacc agtagatgcc
840
attcgtattc ttggtattca caaaagagct ggggaaccac tgggtgtgac atttagggtt
900
gaaaataatg atctggtaat tgcccgaatc ctccatgggg gaatgataga tcgacaaggt
960
ctacttcatg tgggagatat aattaaagaa gtcaatggcc atgaggttgg aaataatcca
1020
aaggaattac aagaattact gaaaaatatt agtggaagtg tcaccctaaa aatcttacca
1080
agttatagag ataccattac tcctcaacag gtatttgtga agtgtcattt tgattataat
1140
```

```
ccatacaatg acaacctaat accttgcaaa gaagcaggat tgaagttttc caaaggagag
1200
attcttcaga ttgtaaatag agaagatcca aattggtggc aggctagcca tgtaaaagag
1260
ggaggaagcg ctggtctcat tccaagccag ttcctggaag agaagagaaa ggcatttgtt
1320
agaagagact gggacaattc aggacctttt tgtggaacta taagtagcaa aaaaaagaaa
1380
aagatgatgt atctcacaac cagaaatgca gaatttgatc gtcatgaaat ccagatatat
1440
gaggaggtag ccaaaatgcc tcccttccag agaaaaacat tagtattgat aggagctcaa
1500
ggtgtaggcc gaagaagctt gaaaaacagg ttcatagtat tgaatcccac tagatttgga
1560
actacggtgc catttacttc acggaaacca agggaagatg aaaaagatgg ccaggcatat
1620
aagtttgtgt cacgatctga gatggaagca gatattaaag ctggaaagta tttggaacat
1680
ggggaatatg aaggaaatct ctatggaacc aaaattgatt ctattcttga ggttgtccaa
1740
actggacgga cttgcattct ggatgtcaac ccacaagcac tgaaagtatt gaggacatca
1800
gagtttatgc cctatgtggt atttattgcg gctccggagc tagagacgtt acgtgccatg
1860
cacaaggctg tggtggatgc aggaatcact accaagcttc tgaccgactc tgacttgaag
1920
aaaacagtgg atgaaagtgc acggattcag agagcataca accactattt tgatttgatc
1980
atcataaatg ataatctaga caaagccttt gaaaaactgc aaactgccat agagaaactg
2040
agaatggaac cacagtgggt cccaatcagc tgggtttact gatgattcag taaggttaac
2100
aatgaaaatt aaactcttaa aaagtgactg caacaaataa accttctact gagaaaatac
2160
atcacagata gaagattatc tgctaagtcc aggcattttt atggtgtaga ttgaaataat
2220
agtacacttc tgaattttta tataaatgt ggttggaagg tgtactaata tataatttat
2280
cttaattttt ctaactttgt atggataatc tttctattca tatcacataa agaaatgcgt
2340
tgaagcaaaa aaaaaaaaa aaaaa
2366


<210> 5228
<211> 550
<212> PRT
<213> Homo sapiens

<400> 5228
Arg Leu Gly Val Val Glu Ile Gly Arg Ile Pro Gly Gly Ile Trp Glu
 1               5                  10                  15
Asn Leu Thr Glu Leu Pro Ser Ser Thr Gly Ala Glu Glu Ile Asp Leu
                20                  25                  30
Ile Phe Leu Lys Gly Ile Met Glu Asn Pro Ile Val Lys Ser Leu Ala
```

4407

```
              35                    40                    45
Lys Ala Arg Glu Arg Leu Glu Asp Ser Lys Leu Glu Ala Val Ser Asp
    50                    55                    60
Asn Asn Leu Glu Leu Val Asn Glu Ile Leu Glu Asp Ile Thr Pro Leu
65                    70                    75                    80
Ile Asn Val Asp Glu Asn Val Ala Glu Leu Val Gly Ile Leu Lys Glu
                  85                    90                    95
Pro His Phe Gln Ser Leu Leu Glu Ala His Asp Ile Val Ala Ser Lys
                  100                   105                   110
Cys Tyr Asp Ser Pro Pro Ser Ser Pro Glu Met Asn Asn Ser Ser Ile
          115                   120                   125
Asn Asn Gln Leu Leu Pro Val Asp Ala Ile Arg Ile Leu Gly Ile His
    130                   135                   140
Lys Arg Ala Gly Glu Pro Leu Gly Val Thr Phe Arg Val Glu Asn Asn
145                   150                   155                   160
Asp Leu Val Ile Ala Arg Ile Leu His Gly Gly Met Ile Asp Arg Gln
                  165                   170                   175
Gly Leu Leu His Val Gly Asp Ile Ile Lys Glu Val Asn Gly His Glu
                  180                   185                   190
Val Gly Asn Asn Pro Lys Glu Leu Gln Glu Leu Leu Lys Asn Ile Ser
          195                   200                   205
Gly Ser Val Thr Leu Lys Ile Leu Pro Ser Tyr Arg Asp Thr Ile Thr
    210                   215                   220
Pro Gln Gln Val Phe Val Lys Cys His Phe Asp Tyr Asn Pro Tyr Asn
225                   230                   235                   240
Asp Asn Leu Ile Pro Cys Lys Glu Ala Gly Leu Lys Phe Ser Lys Gly
                  245                   250                   255
Glu Ile Leu Gln Ile Val Asn Arg Glu Asp Pro Asn Trp Trp Gln Ala
                  260                   265                   270
Ser His Val Lys Glu Gly Gly Ser Ala Gly Leu Ile Pro Ser Gln Phe
          275                   280                   285
Leu Glu Glu Lys Arg Lys Ala Phe Val Arg Arg Asp Trp Asp Asn Ser
    290                   295                   300
Gly Pro Phe Cys Gly Thr Ile Ser Ser Lys Lys Lys Lys Lys Met Met
305                   310                   315                   320
Tyr Leu Thr Thr Arg Asn Ala Glu Phe Asp Arg His Glu Ile Gln Ile
                  325                   330                   335
Tyr Glu Glu Val Ala Lys Met Pro Pro Phe Gln Arg Lys Thr Leu Val
                  340                   345                   350
Leu Ile Gly Ala Gln Gly Val Gly Arg Arg Ser Leu Lys Asn Arg Phe
          355                   360                   365
Ile Val Leu Asn Pro Thr Arg Phe Gly Thr Thr Val Pro Phe Thr Ser
    370                   375                   380
Arg Lys Pro Arg Glu Asp Glu Lys Asp Gly Gln Ala Tyr Lys Phe Val
385                   390                   395                   400
Ser Arg Ser Glu Met Glu Ala Asp Ile Lys Ala Gly Lys Tyr Leu Glu
                  405                   410                   415
His Gly Glu Tyr Glu Gly Asn Leu Tyr Gly Thr Lys Ile Asp Ser Ile
                  420                   425                   430
Leu Glu Val Val Gln Thr Gly Arg Thr Cys Ile Leu Asp Val Asn Pro
          435                   440                   445
Gln Ala Leu Lys Val Leu Arg Thr Ser Glu Phe Met Pro Tyr Val Val
    450                   455                   460
Phe Ile Ala Ala Pro Glu Leu Glu Thr Leu Arg Ala Met His Lys Ala
```

```
          465                   470                   475                   480
          Val Val Asp Ala Gly Ile Thr Thr Lys Leu Leu Thr Asp Ser Asp Leu
                              485                   490                   495
          Lys Lys Thr Val Asp Glu Ser Ala Arg Ile Gln Arg Ala Tyr Asn His
                          500                   505                   510
          Tyr Phe Asp Leu Ile Ile Ile Asn Asp Asn Leu Asp Lys Ala Phe Glu
                      515                   520                   525
          Lys Leu Gln Thr Ala Ile Glu Lys Leu Arg Met Glu Pro Gln Trp Val
                  530                   535                   540
          Pro Ile Ser Trp Val Tyr
          545                   550
```

<210> 5229
<211> 1031
<212> DNA
<213> Homo sapiens

<400> 5229

```
acgcgtgtgc tgtggttaca tccgtggaac agacagacag cagctgcccc tgcaaatgtc
60
agcgccagcc cagtcaaaag agcttgaaac ctaccaagcc ggaggactgt gctgtgcctc
120
tctcgcccac attttcccca agcactctca ggaacctggc aacagtgtcc ccttgtggcc
180
aagcctggaa catcacatct gtacgttgca atctgtggat cagctacgag actgagagaa
240
aggaatgaaa ggatggaaga attacaagat caggcactgc tgtctgtctg ttccacggat
300
gtaaccacag cacacgcgtg gctcacggta ctagtgtgat aaatgcttgt tacatgaagg
360
cgtgaacagg gatgagaaga gacttcctgg agaaacaaaa ggactaacaa tcaggaaggg
420
gaggtgatcg gggcaggagt aaagtggaca cctcagcaaa gccattcgct gtgatctctg
480
attgtgcagt gtcatgtcct gtcaccagag ccccctcgtg tttgatgttg gccaatgccg
540
ccagcatgat ctagcaggcc aaatcctaat ctaccattct ctgacaccag ctggtcccct
600
ggggtcgtcc acccgatgtc ccccattctc cccacttggc ctcccccaca ggctctcggc
660
aaaggaccgt gggaggcacc tgtgacactg ccctttttcct gtgcagctgt ttttcttctt
720
cattcttttc actcctcgtt actctttttt ttttcactct cagcccacac aaaactagga
780
actttgttat tctacttatt tttctgtact ctgtctgttt gcacacagat ggatatctga
840
gagccagcga actttcttta cctcctagta tcatttcatg aaaattagta gcacctgcac
900
aatggggcct tggagacagg aataaaagga aaaatctgga atggaatcac atgacgcaac
960
aggctatgaa gactccctgc ccggctgcta tatgtctggt aaacagaata aatagtactt
1020
gagcatccct g
1031
```

<210> 5230
<211> 102
<212> PRT
<213> Homo sapiens

<400> 5230
Met Ile Leu Gly Gly Lys Glu Ser Ser Leu Ala Leu Arg Tyr Pro Ser
 1   5   10   15
Val Cys Lys Gln Thr Glu Tyr Arg Lys Ile Ser Arg Ile Thr Lys Phe
            20   25   30
Leu Val Leu Cys Gly Leu Arg Val Lys Lys Lys Arg Val Thr Arg Ser
        35   40   45
Glu Lys Asn Glu Glu Glu Lys Gln Leu His Arg Lys Arg Ala Val Ser
    50   55   60
Gln Val Pro Pro Thr Val Leu Cys Arg Glu Pro Val Gly Glu Ala Lys
65   70   75   80
Trp Gly Glu Trp Gly Thr Ser Gly Gly Arg Pro Gln Gly Thr Ser Trp
                85   90   95
Cys Gln Arg Met Val Asp
            100

<210> 5231
<211> 845
<212> DNA
<213> Homo sapiens

<400> 5231
tccggatctt ggagggtaca gagggcgccc ctcggcctcc tccctttcgg aggtggggac
60
aaggtggagg aagggctgca ggaggaggag ctctagcatc gcgacccgcc ccgtcccgtc
120
cagtctggcc tgggcgccgc gggaacgctg tcctggctgc cgccacccga acagcctgtc
180
ctggtgcccc ggctccctgc cccgcgccca gtcatgaccc tgcgcccctc actcctcccg
240
ctccatctgc tgctgctgct gctgctcagt gcggcggtgt gccgggctga ggctgggctc
300
gaaaccgaaa gtcccgtccg gaccctccaa gtggagaccc tggtggagcc cccagaacca
360
tgtgccgagc ccgctgcttt tggagacacg cttcacatac actacacggg aagcttggta
420
gatggacgta ttattgacac ctccctgacc agagaccctc tggttataga acttggccaa
480
aagcaggtga ttccaggtct ggagcagagt cttctcgaca tgtgtgtggg agagaagcga
540
agggcaatca ttccttctca cttggcctat ggaaaacggg gatttccacc atctgtccca
600
gcggatgcag tggtgcagta tgacgtggag ctgattgcac taatccgagc caactactgg
660
ctaaagctgg tgaagggcat tttgcctctg gtagggatgg ccatggtgcc agccctcctg
720
ggcctcattg ggtatcacct atacagaaag gccaatagac ccaaagtctc caaaaagaag
780